A Clinical Lecture
ON
THE TREATMENT OF PERNICIOUS ANAEMIA.

DELIVERED AT THE ROYAL INFIRMARY, EDINBURGH,

BY

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I BEGAN the study of pernicious anaemia now almost forty years ago, when I was physician to the Newcastle-on-Tyne Infirmary. In the year 1874 two cases of profound anaemia were admitted to the Newcastle Infirmary under my care; both died, as these cases so often do. The disease was then very little known in this country, though it had been described by the celebrated Dr. Addison. He met with a number of cases of fatal and apparently causeless anaemia; he termed it "idiopathic anaemia," and it was while hunting about in the bodies of patients after death to try and find the cause of this peculiar form of anaemia that he discovered the remarkable lesion of the suprarenal capsules which is the pathological substratum of the disease, which we now, of course, all know as Addison's disease.

The terms "pernicious anaemia" and "progressive pernicious anaemia" were subsequently given to the idiopathic anaemia described by Addison, for it was found—as, indeed, he had found—that the patients suffering from this form of anaemia always, or almost always, died, whatever the form of treatment employed. Addison failed to discover any cause for this profound and fatal anaemia, and we are still ignorant of its exact cause.

Now, profound anaemia arising without any loss of blood or other apparent cause may, theoretically at least, be due to one or other of two great causes—namely, either a defective production or an excessive destruction of the red blood corpuscles. Either of these two conditions may, when acting in a marked degree, produce a very profound form of anaemia.

About the time that I commenced the study of pernicious anaemia a celebrated American physician, Dr. Pepper, Professor of Medicine, and afterwards Principal or Provost of the University of Pennsylvania, described the lesion in the marrow of the bones found in the bodies of patients who have died of pernicious anaemia. He termed the disease "myelogenous anaemia," for he thought it was due to defective production of red blood cells in the bone marrow. The bone marrow is, I need not say, the most important red-blood-producing structure. Pepper thought that this lesion in the bone marrow was the fundamental lesion of the disease.

Some years later, when I was assistant physician to this infirmary, I had as one of my assistants Dr. William Hunter, who has identified himself with the subject of pernicious anaemia. While he was my assistant in the out-patient department he made a series of very important observations with regard to the *post-mortem* findings in pernicious anaemia and with regard to the artificial production of anaemia in animals. He came to the conclusion that pernicious anaemia is not due to defective formation of red blood corpuscles in bone marrow, as Pepper had supposed, but to excessive destruction of the red blood cells in the portal circulation. In proof of this he advanced the fact that the liver in pernicious anaemia shows a large excess of iron.

In my early studies of pernicious anaemia I paid particular attention to the condition of the blood. I found that the red blood corpuscles, instead of being biconcave, circular discs, all about the same size, varied greatly in size and shape, some being larger, some smaller than the normal, and many of them misshaped in various ways—poikilocytosis, as it is now termed—some of them apparently nucleated. I described and figured this condition in the *Edinburgh Medical Journal*. The nucleated condition of the red corpuscles, as I took it to be—in unstained films parts of some of the corpuscles are more deeply pigmented than normal—was subsequently shown to be merely an apparent, not a true nucleation, due to a concentration of the haemoglobin in a particular part of the corpuscles. But we now know that in many cases of pernicious anaemia some of the red blood corpuscles, stained by methylene blue and eosin, are actually nucleated; indeed, this nucleated condition of the red corpuscles is a characteristic feature of the blood in many cases of pernicious anaemia; but it is not the condition I described.

When Dr. Hunter told me of his researches and of his view that pernicious anaemia is due to an excessive destruction of red blood corpuscles in the portal circulation, I asked him how he accounted for the enormous number of small, immature, imperfectly-formed red blood corpuscles which is such a striking feature of the blood in pernicious anaemia—the presence in the blood of so many immature red blood corpuscles seems to show that there is a defective formation of red cells. He met that argument in, I think, a perfectly legitimate and satisfactory way. He said if you destroy at one end of the circulation, say in the portal circulation, an enormous number of red blood cells, you call upon the bone marrow—the red-blood-forming tissue—for an excess effort, with the result that a great number of immature and imperfectly-formed red blood corpuscles are thrown into the circulation. That certainly seems a plausible explanation, but it is not, perhaps, the whole truth.

We may take it, then, that there is excessive destruction of red blood corpuscles in the portal circulation, together with an excessive production of immature and imperfectly-formed red corpuscles in the bone marrow. Free iron is liberated and is stored up in the liver—this is seen *post mortem*. The bone marrow is called upon to produce an excessive quantity of red blood cells, and it is, as we know, found on *post-mortem* examination to be in an abnormal condition. The destruction of the red corpuscles in the portal circulation is probably due to the presence of some toxin, which is probably absorbed from the gastro-intestinal tract. But, if this is so, we do not know what the toxin is.

Now it is possible that the toxin which destroys the red blood corpuscles in the portal circulation also stimulates the bone marrow to excessive formation of red blood corpuscles, or perhaps acts injuriously upon the bone marrow; and, if this be so, the lesion in the bone marrow is not merely a compensatory effort to meet the excessive destruction of red blood cells which is undoubtedly present; it is not merely a secondary lesion, but is, in part at least, a primary lesion.

The bodies of persons who have died from pernicious anaemia are extremely bloodless; the tissues are very often stained yellow—canary or primrose yellow; the most characteristic naked-eye lesion is the fatty condition of the organs, particularly of the heart; the thrush-breasted or faded-leaf appearance of the muscle of the left ventricle is highly characteristic. In many cases small petechial haemorrhages are scattered throughout the body—in the retina, on the surface of the heart, lungs, brain, for example. Professor Stockman of Glasgow suggested some years ago that these haemorrhages are the cause of pernicious anaemia. But that is not so; they are merely secondary—a consequence not a cause of the condition. In some typical cases of pernicious anaemia no petechial or other haemorrhages are found on *post-mortem* examination.

In the fatal cases of pernicious anaemia which I examined *post mortem* in 1874, I was struck by the fatty condition of the heart. I knew that arsenic is a remedy which is often very beneficial in cases of fatty heart, and I said to myself, Why should one not try arsenic in cases of pernicious anaemia? I tried it, with very marked success.

During 1875 six cases of pernicious anaemia were admitted under my care in the Newcastle-on-Tyne Infirmary; all of them were treated with arsenic. One of these early cases lived for thirteen and a half years, and ultimately died of the disease, having had several relapses. That patient lived, I think, longer than any other case which has come under my notice.

It is a very remarkable fact that the first cases which one treats with any new remedy are often singularly successful. My experience of the thyroid treatment of

psoriasis shows this. In the first case of myxoedema which I treated by thyroid I gave too large doses, and produced acute thyroidism; it was attended with profuse desquamation of the skin. I argued that if thyroid tissue—I was then using the raw gland—could produce this extraordinary desquamation in myxoedema, it would probably be of use in psoriasis and other skin diseases. In the first three cases of psoriasis in which I tried it the result was remarkable. The extraordinary success in these first cases led me to think that I had made a remarkable discovery. There is no doubt that it was a discovery and advance, for many cases of psoriasis and certain other skin diseases are very greatly benefited by thyroid treatment, but the remedy is an uncertain one. Some cases of psoriasis are cured by it, or temporarily cured by it; others are not. I have had many successful and many unsuccessful results. I mention this for the purpose of showing how careful one should be in drawing therapeutic or indeed any other conclusions from a limited number of cases. I will give you another example—a remarkable coincidence which shows how fallacious it is to reason from a limited number of cases. Of the first 7 cases of pernicious anaemia which I treated by salvarsan three were women and four were men. The names of all the women began with P, and the names of all the men with S. Now if one limited oneself to these facts, and if one were dealing with a new disease one might perhaps argue that the names of all women affected with pernicious anaemia begin with P, and the names of all men affected with pernicious anaemia begin with S. This, of course, is a bizarre illustration, but it shows what I mean.

Since I began to treat pernicious anaemia with arsenic in 1875 I have had a long and continuous experience of this and other methods in the treatment of this very grave and fatal disease. The result has been to show that cases of pernicious anaemia, if they are first attacks, usually do exceedingly well under arsenical treatment; that many of them get apparently quite well, but that, with very few exceptions, they relapse and ultimately die of the disease. The remedy seems to lose its effect and to be much less efficacious in the relapses than in the primary attacks. Consequently, we want some better remedy than arsenic for pernicious anaemia.

Dr. William Hunter has directed attention to the condition of the mouth and tongue, and emphasized the importance of oral sepsis. I think he has attached far too much importance to this point. I have seen and published several cases of pernicious anaemia in which there were no decayed teeth, and in which for years before the onset of the disease the patient had had no teeth. I have seen several cases in which there had never been any ulcers on the tongue or any inflamed or irritative condition of the buccal mucous membrane; I look upon the ulcers in the mouth merely as part and parcel of the disease, perhaps due to the same toxin which destroys the red blood cells, but not the primary, or even a predisposing, cause of the disease.

In addition to arsenic, a great number of other remedies have, of course, been employed in the treatment of pernicious anaemia. Iron has been given, but in the great majority of cases it does harm rather than good. One would expect this from the condition of the blood in pernicious anaemia.

In the normal male the red blood corpuscles number 5,000,000 per cubic millimetre, the haemoglobin equals 100 per cent. (with Gowers's instrument, which we use, we rarely get 100 per cent.), and the colour index, which represents the percentage of haemoglobin divided by the percentage of red corpuscles, equals 1 ($\frac{\text{C.I. } 100}{\text{R.C. } 100} = 1$). In pernicious anaemia there is an enormous diminution of the red blood cells; in an average well-marked case the red blood corpuscles number 1,000,000 instead of 5,000,000; the haemoglobin equals 30 per cent. or more; and the colour index is consequently above the normal 1.5 or more ($\frac{\text{C.I. } 30}{\text{R.C. } 20} = 1.5$). The haemoglobin is in many cases much higher than this; in some cases the colour index is 2 or even more.

In chlorosis, another form of idiopathic anaemia, the red blood corpuscles usually number about 3,500,000 per cubic millimetre (the average normal number of red corpuscles in the female is 4,500,000); the haemoglobin is about 50 per cent., and the colour index is often about 0.5 or less.

There is, then, this striking difference between chlorosis and pernicious anaemia, that in chlorosis each red cell contains on an average about half the normal amount of haemoglobin, whereas in pernicious anaemia it contains more than the normal amount of haemoglobin. Consequently, the indication is to give iron in chlorosis; and we find, as a matter of fact, that iron is a specific in that disease. But if you give iron in pernicious anaemia, if you stuff the red cells, which already contain too much iron, with more iron, you do harm rather than good. There are, however, some cases of pernicious anaemia in which iron seems to do good, but they are quite exceptional. I have published some cases of this kind.

Intestinal antiseptics, such as beta-naphthol and bone-marrow, also have been tried, and in some cases the result has been satisfactory. Treating the mouth, removing bad and decayed teeth and stumps, keeping the mouth so far as possible in an aseptic condition, has been insisted upon by Dr. Hunter. It should certainly be done, for a bad condition of the mouth may do harm and cannot do good.

None of the remedies which have been used, with the exception of arsenic, have stood the test of a prolonged trial. Experience has, I think, shown that arsenic is the only remedy which up to the present time has afforded any real benefit in the treatment of pernicious anaemia, but its beneficial effects are in the great majority of cases only temporary.

Two or three years ago salvarsan was introduced by Ehrlich for the treatment of syphilis; it contains arsenic and mercury. After seeing the remarkable effects of this remedy in some cases of syphilis, I thought that possibly it might give as good or better results in pernicious anaemia than the ordinary arsenical treatment—Fowler's solution by the mouth. In giving arsenic by the mouth, I begin with small doses—2 minims of Fowler's solution, three times a day after food—and gradually increase the dose by an extra drop every fourth or fifth day until the maximum which the patient can take is reached. This dose varies greatly in different cases; it is 10 or 12 drops in most cases, and 16 or 20 drops in some cases, three times a day. I push the remedy until I find the maximum dose which the individual patient can take; I then go on with that dose for several weeks. In some cases intestinal disturbance, particularly diarrhoea, is produced even by small doses; I have found in these cases that by combining a small dose of morphine—an eighth of a grain or less—with each dose of the arsenic, the arsenic is usually quite well borne.

Further, one must remember that if one gives arsenic in large doses for a long period of time one runs the risk of producing arsenical neuritis—a very serious condition; I have seen it produced in several of my cases of pernicious anaemia. But some risks must be run. Pernicious anaemia, if allowed to go on, will certainly kill the patient.

I commenced the salvarsan treatment of pernicious anaemia in October, 1910—two and a half years ago—and have treated eleven cases with salvarsan, with, on the whole, most remarkably beneficial effects. I will show four of the patients and briefly describe the results in all of the cases.

CASE I.

A man, J. S., aged 49, married, an electric hoist man, formerly a soldier, was admitted to the infirmary in October, 1910; I had seen him in October, 1909, and had then prescribed arsenic by the mouth. He presented all the characteristic features of pernicious anaemia. The red blood corpuscles numbered 1,035,000 per cubic millimetre, the haemoglobin equalled 30 per cent., the colour index was 1.5. He had four injections of salvarsan (December 21st, 0.2 gram; January 5th, 1911, 0.3 gram; January 19th, 0.3 gram; February 9th, 0.3 gram.) I may say that I have in all cases injected the remedy into the gluteal muscles; in none of my cases has the intravenous method been employed. He was discharged from the infirmary on February 22nd, 1911, looking and feeling perfectly well; all the anaemic symptoms had disappeared. The red blood corpuscles were then 3,580,000 per cubic millimetre, the haemoglobin equalled 78 per cent., and the colour index was 1.1. He has remained quite well and has been working regularly ever since. I saw him last, on March 7th, 1912; the red blood corpuscles then numbered 4,580,000 per cubic millimetre, the haemoglobin equalled 94 per cent, and the colour index was 1. When I saw him last, on March 7th, 1912, he had, in consequence of the railway strike, to walk ten miles to get here in time for the clinic. He was perfectly fit and fresh after the ten-mile walk.

You will see that he looks quite well. He tells me that he has been quite well and working regularly every day since March, 1912.*

CASE II.

A woman, Mrs. P., aged 40, was admitted to the infirmary on November 15th, 1910, suffering from all the characteristic symptoms of pernicious anaemia. On November 15th, 1910, the red blood corpuscles numbered 990,000 per cubic millimetre, the haemoglobin equalled 30 per cent., and the colour index was 1.6. She had four injections of salvarsan (December 24th, 1910, 0.3 gram; January 7th, 1911, 0.3 gram; January 24th, 0.3 gram; February 9th, 0.3 gram). She made an uninterrupted recovery and was discharged from hospital on March 16th, 1911, looking and feeling well. Her red corpuscles then numbered 4,420,000, the haemoglobin equalled 94 per cent., and the colour index was 1.1. When her blood was counted last, on March 7th, 1912, the red corpuscles numbered 6,210,000 per cubic millimetre, the haemoglobin equalled 120 per cent., and the colour index was 0.97. Now this is the only case of pernicious anaemia I have seen in which the red corpuscles have gone above the normal as the result of treatment. I will now show you this patient, whom I have not seen for a year. She looks, you will see, the picture of health. She states that during the past year she has been perfectly well, with the exception of several attacks of biliary colic.

CASE III.

This case was a very severe one. A woman, Mrs. P., aged 56, was admitted to the infirmary on March 30th, 1911, apparently in a dying condition; the red blood corpuscles numbered 680,000 per cubic millimetre, the haemoglobin equalled 18 per cent., and the colour index was 1.3. She had two injections of salvarsan (April 6th, 0.3 gram; May 4th, 0.3 gram). All of us who watched the case were profoundly impressed with the remarkable improvement in her appearance and symptoms which followed the treatment; the red corpuscles went up to 1,020,000, the haemoglobin to 28 per cent., and the colour index was 1.4. She discharged herself on July 25th; she relapsed and died on September 5th, 1911.

CASE IV.

This was a remarkable case. A woman, Mrs. P., aged 41, was admitted to the infirmary on March 28th, 1911. The red blood corpuscles numbered 695,000, the haemoglobin equalled 16 per cent., and the colour index was 1.15. She had two injections of salvarsan (April 6th, 0.3 gram; April 21st, 0.3 gram). On May 5th she had to go home to look after her house and children, one of whom was ill. She was in poor circumstances, she had to nurse her sick child and do all her housework, washing, etc. On her discharge from hospital the red corpuscles numbered 1,495,000 per cubic millimetre, the haemoglobin equalled 34 per cent., and the colour index 1.2. Well, she went home; I never expected that she would improve, and did not hear of her again till May, 1912. She was unable to leave her children and come into hospital for further salvarsan treatment, and on May 23rd, 1912, I sent her a prescription for arsenic—2 minims of Fowler's solution three times daily. She only took two bottles of the medicine, and has had no treatment since. I have seen her from time to time. I was able, through the kindness of some friends, to get up a small fund in order to enable her to live more comfortably. She has made a splendid recovery. On January 18th, 1913, the red corpuscles numbered 4,060,000 per cubic millimetre, the haemoglobin equalled 74 per cent., and the colour index was 0.91. You will see that she looks remarkably well. She tells me that she feels perfectly well, and has since her discharge from hospital done all her housework without any assistance.

On *March 1st, 1913*, the patient wrote to me as follows: "In reply to your letter of the 28th February, I hope you will not be displeased when I tell you that I have only taken two bottles of the medicine, and just started to take the third one now. I have not been taking it constantly. Doctor, I thought I would just tell you that I have never had to call in the doctor for myself since I left the Royal Infirmary, and this is the first two years in my life, as far back as I can remember. It is out of a full heart of gratitude I thank you again for your great skill and kindness shown towards me and my humble home."

This is a very remarkable case, because when the patient was discharged from hospital she was very ill—profoundly anaemic, feet swollen, etc.—and she had to struggle on under great disadvantages.

CASE V.

A man, W. S., aged 50, was admitted to the infirmary on May 12th, 1911, suffering from profound pernicious anaemia. He had two injections of salvarsan (May 15th, 0.3 gram; June 19th, 0.3 gram). Slight improvement followed the first injection, but the improvement was only temporary; he died on June 24th, 1911. In this case the treatment produced no benefit.

CASE VI.

A man, P. S., aged 31, was admitted to the infirmary on May 17th, 1911, with very marked pernicious anaemia. The red blood corpuscles numbered 955,000 per cubic millimetre, the haemoglobin equalled 26 per cent., the colour index was 1.4. He had three injections of salvarsan (May 29th, 0.3 gram; June 12th, 0.3 gram; July 12th, 0.3 gram), but he did not improve, and went home, we thought to die, with his red cells numbering 600,000 per cubic millimetre, haemoglobin 19 per cent., and the colour index 1.6. In this case salvarsan seemed to do no good whatever while the patient was under treatment in the hospital. After going home, he remained semicomatose for ten days. He then began to improve and ultimately got apparently perfectly well. When I saw him on November 11th, 1911, he looked quite well; his red blood corpuscles numbered 3,100,000 per cubic millimetre, the haemoglobin equalled 66 per cent., and the colour index was 1.1. He had no treatment for the anaemia after leaving the hospital.

He remained in good health, without any return of the anaemia, until February, 1912, when he died from acute croupous pneumonia.

I am not going to affirm that this extraordinary improvement was the result of the salvarsan treatment, for we occasionally see cases of pernicious anaemia which show these very remarkable alterations and improvements. At the same time I cannot altogether rid my mind of the idea that the salvarsan was, perhaps, the cause of the improvement, for in two cases which have proved fatal, and have been examined *post mortem*, the salvarsan was found to be encapsuled in the buttock, and much of it unabsorbed, even after a very considerable time. I think it is quite possible that the long-continued improvement which has resulted in many of the cases which I have treated with salvarsan is probably due to the slow and gradual absorption of the remedy. If that is so, the extraordinary improvement in this case may perhaps have been the result of the salvarsan treatment.

CASE VII.

T. S., aged 55, was admitted to the hospital on October 24th, 1911, suffering from profound pernicious anaemia. His red blood corpuscles numbered 790,000 per cubic millimetre, the haemoglobin equalled 27 per cent., and the colour index was 1.7. It was a very bad case indeed. He had one injection of salvarsan (October 27th, 0.3 gram), and a fortnight afterwards his red blood corpuscles had doubled—1,460,000 per cubic millimetre, the haemoglobin equalled 25 per cent., and the colour index was 0.8. He then unfortunately took an attack of bronchopneumonia and died.

Since I left this infirmary I have had some further experience in the salvarsan treatment of pernicious anaemia.

CASE VIII.

This was an extremely severe case of pernicious anaemia in a young man of 25; it was of three years' duration (it is very unusual for pernicious anaemia to develop at such an early age—22). It was one of the most severe cases I have ever seen. The patient was admitted to Chalmers Hospital on October 3rd, 1912; he had two injections of salvarsan (October 6th, 0.3 gram; October 12th, 0.3 gram); there was no improvement. He died on October 14th, 1912.

Now, in a severe case of pernicious anaemia—and the same statement applies to every grave organic disease—one must expect to find many failures from any plan of treatment, however successful it is in the great majority of cases. I do not claim that salvarsan will produce improvement in every case of pernicious anaemia, but I do say that it does produce remarkable improvement in a very considerable proportion of cases.

CASE IX.

A man, J. C., aged 72, was admitted to Chalmers Hospital on August 30th, 1912, suffering from very severe pernicious anaemia. His red blood corpuscles numbered 1,055,000 per cubic millimetre, the haemoglobin was 26 per cent., and the colour index 1.3. Although 72 years of age, he improved remarkably under this treatment. He had three injections of salvarsan (August 31st, 0.3 gram; September 14th, 0.3 gram; September 28th, 0.6 gram). He was discharged on November 27th, 1912; his red blood corpuscles then numbered 3,450,000 per cubic millimetre, the haemoglobin equalled 75 per cent., and the colour index was 1.

I intended to have brought this patient before you today, but I hear he is not well enough to come; whether it is simply a relapse of his old trouble or something else I do not know; but, be that as it may, the beneficial effects of the treatment in that case were very striking.

CASE X.

A man, J. T., aged 59, was admitted to Chalmers Hospital on December 12th, 1912, suffering from very profound pernicious anaemia with oedema of the feet, etc. His red corpuscles numbered 1,045,000 per cubic millimetre, the haemoglobin equalled 24 per cent., and the colour index was 1.14. He had two injections (0.3 gram of salvarsan on December 13th, 1912, and 0.3 gram of neo-salvarsan on January 9th, 1913.) He is now quite well. He looks the picture of health. On February 14th,

* Cases I to VII are fully reported in the BRITISH MEDICAL JOURNAL, June 22nd, 1912.

1913, his red corpuscles numbered 3,900,000 per cubic millimetre, the haemoglobin equalled 86 per cent., and the colour index was 1.1. This is one of the most successful cases I have had.

CASE XI.

A man, J. R., aged 58, was admitted to Chalmers Hospital on January 11th, 1913, suffering from moderately severe pernicious anaemia. His red corpuscles numbered 1,690,000 per cubic millimetre, the haemoglobin equalled 48 per cent., and the colour index was 1.4. He has had two injections of neo-salvarsan (January 14th, 1913, 0.5 gram; February 14th, 0.5 gram). Up to the present time the improvement in this case has only been slight, but sufficient time has not yet elapsed to allow of a definite statement regarding the result. On February 6th his red corpuscles numbered 2,490,000, the haemoglobin equalled 67 per cent., and the colour index was 1.2.

CASE XII.

Another case, which is perhaps a case of pernicious anaemia, though the diagnosis is somewhat uncertain, is that of a man aged 42. He was admitted to Chalmers Hospital on December 16th, 1912, suffering from subacute combined paralysis and a moderate amount of anaemia (the red corpuscles numbered 2,750,000 per cubic millimetre, the haemoglobin equalled 80 per cent., and the colour index was 1.4). The high colour index is very suggestive that the anaemia is of the pernicious type. He has had two injections of neo-salvarsan (December 23rd, 1912, 0.4 gram; January 24th, 1913, 0.4 gram). There has been a slight improvement in the condition of the blood, but no improvement in the nervous symptoms.

I mention this last case as I am anxious to give my full experience—every case in which I have employed this treatment—whether the result has been satisfactory or not.

I have now given the results of eleven cases of undoubted pernicious anaemia, and of one doubtful case treated by salvarsan; of the eleven undoubted cases, four have been apparently completely cured—whether in these cases a relapse will occur or not I am, of course, quite unable to say; in two cases there was very striking improvement; in one case there was very considerable improvement, but ultimately a relapse and death; in one case there was slight improvement and death from bronchopneumonia while under treatment; in two cases there was no improvement; and in one case slight improvement, the patient being still under treatment. In the case of subacute combined paralysis associated with anaemia (perhaps pernicious anaemia), I tried the remedy as a last resource, though I did not expect it to beneficially affect the spinal lesion.

These results are very striking and very encouraging. I have had nearly forty years' experience of the ordinary arsenical plan of treatment of pernicious anaemia, and I have the greatest confidence in saying that the salvarsan treatment, so far as my present experience enables me to judge, is superior to the ordinary arsenical treatment. Further experience is, however, required before one can say whether the beneficial effects, which it undoubtedly produces in many cases, will be lasting or merely temporary.

In giving salvarsan I have always given it intramuscularly. In syphilis the usual way is to give it intravenously. In syphilis we know there is a definite organism, and we want to kill that organism as rapidly and as effectually as possible. In the treatment of syphilis the usual plan is to inject 0.6 gram of salvarsan into a vein. In primary and secondary syphilis the results are quite remarkable; relapses occur, however. The results in some of the tertiary cases are not so satisfactory as was at one time supposed. The results of salvarsan treatment in such conditions as tabes and general paralysis of the insane—parasyphilitic lesions—are practically *nil*. There have been different opinions expressed on this point, but I think the experience of the great majority of reliable physicians is that in tabes and general paralysis of the insane salvarsan is of little or no use.

In pernicious anaemia I have employed the intramuscular method of administration, for, in this disease, we want, I think, a remedy which will produce sustained and continued effects. We do not know what the toxin is which appears to be the cause of pernicious anaemia—whether a germ toxin or a chemical toxin. The dose I have always employed has been 0.3 gram, half the dose which is usually given in syphilis. In severe and advanced cases of pernicious anaemia, in which the patient's hold of life is very precarious indeed—and this was the condition in many of the cases I have brought before you—a very little thing will turn the scale. I have therefore hesitated in these cases to give the remedy by the intravenous method.

In some cases the salvarsan, when given intramuscularly, produces very considerable inflammation, pain, and swelling; but the neo-salvarsan seems to be much more satisfactory in this respect—it does not produce such marked local results. In the cases in which I have used neo-salvarsan I have found that there is little or no local pain or hardness, and little or no rise in temperature. In the meantime I shall continue to give the remedy intramuscularly.

ADDENDUM (*May 7th, 1913*).

CASE IX.

This patient was readmitted to Chalmers Hospital on March 3rd, 1913, suffering from a severe relapse. The red blood corpuscles numbered 1,010,000 per cubic millimetre; haemoglobin 36 per cent.; colour index 1.7. As the result of two injections of salvarsan he has improved very rapidly; I fear, however, that as soon as he is again discharged another relapse will in all probability occur, and that the effects of the treatment will be merely temporary.

CASE XII.

During February, 1913, this patient rapidly got worse, the paralysis passing into the flaccid stage. He died on March 22nd. *Post-mortem* examination showed all the typical appearances of pernicious anaemia.

ACUTE PERFORATION OF THE GALL BLADDER:

WITH AN ACCOUNT OF SIX CASES.

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IN these days, when the early and exact diagnosis of acute abdominal conditions is a matter of extreme importance, it is essential to form a clear conception of the characteristic signs and of the methods of treatment of even the rarest forms of abdominal catastrophe.

Although McWilliams[1] and Cotte and Arnaud[2] have given such excellent descriptions of perforation of the gall bladder, in nearly all its varieties, there are perhaps some points of particular interest in the cases given below.

The effect of sterile bile in the general peritoneal cavity is to destroy the bactericidal quality of serum.

In rabbits Noetzel showed that whereas a certain amount of *Staphylococcus aureus* or *Bacillus coli* or streptococci placed in the normal healthy peritoneal cavity was innocuous, a similar amount was always fatal provided the bile from the healthy gall bladder was allowed to escape into the body cavity.

Normal bile is well tolerated for a considerable time, and becomes gradually shut off by inflammatory adhesions.

In a case recorded by Garré, operation undertaken two months after the injury which ruptured the gall bladder showed a localized and large collection of bile; the patient got well. In a case recorded by Hildebrandt operation was successful twenty-three days after a tear into the hepatic duct.

Bile which escapes from a rupture in a gall bladder containing stones is not an aseptic fluid, it teems with the *Bacillus coli* or other organisms.

It is in cases in which gangrene and rupture occur in an infected gall bladder that rapid and fatal peritonitis develops. Clearly the prognosis depends chiefly upon the number, character, and virulence of the organisms present in the bile.

McWilliams, omitting the purely traumatic variety, describes three kinds of rupture of the gall bladder:

1. Rupture from over-stretching; with or without stones.
2. Perforation from pressure of stone on the wall.
3. Perforation from gangrene due to:
   - (*a*) Thrombosis of vessels with or without stones.
   - (*b*) Cutting off of circulation from pressure of stone.
   - (*c*) Diphtheritic, ulcerative infection of the wall with or without stone.

To these there must probably be added:

4. Subperitoneal perforation of the gall bladder with subperitoneal extravasation of bile as illustrated in Case VI.

Signs and Symptoms.

As Sir Berkeley Moynihan has frequently pointed out, in every case of gall-bladder trouble, provided the history be carefully noted, there is a complaint of flatulent indigestion over a long period.

Attacks of severe pain in the region of the gall bladder, with shivering fits of great or small intensity, may be present in nearly all cases where there is an infection of any degree of severity.

It is of great interest to find that the sudden agonizing pain characteristic of the rupture of a hollow viscus, followed by a zealous rigidity of the neighbouring body wall, does not occur in all cases; probably both conditions depend to some extent upon the virulence of the invading bile.

At the moment of perforation there is always severe pain in the region of the gall bladder, followed in two or three hours by pain referred to the umbilicus. Moynihan showed how the fluid from a perforated duodenal ulcer gravitates over the bend of the hepatic flexure to the right iliac fossa; fluid escaping from the gall bladder follows the same course, and gives rise to swelling and pain in the region of the appendix.

It is a matter of much interest and of some importance to note that the effusion of a quantity of bile of a degree of virulence sufficient to cause a peritonitis will in course of a day or two give rise to a definite fluid swelling simulating in every way an appendix abscess (Case V).

The degree of rigidity is most variable and there is hardly ever the "marble" hardness found in other abdominal catastrophes. In none of the cases seen by the writer has there been that degree of involuntary stiffness and inability to move about seen in other grave abdominal conditions.

It would appear that the absorption of bile from the peritoneal cavity slows the pulse-rate, just as absorption of bile in cases of jaundice reduces the normal pulse-rate. The pulse-rate after twenty-four hours will depend upon the virulence of the infection and the kind of peritonitis. The temperature may remain subnormal until the formation of an abscess or the onset of acute peritonitis.

Treatment.

Early operation naturally gives the best results. If one can be certain that a catastrophe has occurred, as evidenced by a clear history and by the presence of extensive rigidity in the right hypochondrium, operation should be undertaken at once, before a rise in pulse-rate indicates a considerable extent of peritonitis. The presence of dullness in the right flank would necessitate immediate operation. To be able to say with certainty that there is a perforation of the gall bladder in the early stage, and not a condition of cholecystitis, is probably impossible. So long as the rigidity does not extend beyond the neighbourhood of the gall bladder and so long as the pulse-rate keeps below 95 the case should be watched.

It is of great assistance in helping to come to this decision if the patient lies easily and placidly in his bed and moves about in comfort.

It may happen (Case V) that the condition rapidly settles down within a few hours, and in a few days there is left a localized, dull, tender swelling in the appendix region.

The incision must be vertical, splitting the rectus of the right side. It is an easy matter to extend the incision up or down as required.

In Case IV there was well-marked oedema of the subcutaneous tissues and staining by bile. To quote McWilliams:

> He who is the keenest observer of the conditions found in the abdomen, who can best estimate the virulence of the infection present, the degree of adhesions, and the pathological conditions present in the gall-bladder system, who can make a good mental estimate of how much or how little the patient can stand, who can get in the quickest, inflicting the least possible trauma, will have the greatest successes in these trying cases.

If the gall bladder can be easily and quickly removed, this should be done in every case where there is gangrene present. A large maroon gall bladder with a perforation and containing stones may be emptied and drained after widening the perforation. If there be a stone in the cystic duct, the gall bladder should be removed if circumstances permit (Case IV).

A small contracted gall bladder is difficult to remove at any time, and it would be well in most cases to open, empty, and drain rather than make any attempt to remove. In many cases it is quicker to remove the gall bladder than to drain it. Mere suture of the perforation should never be attempted.

Cholecystotomy gives the best immediate results, 60 per cent. recovering; probably in expert hands cholecystectomy will give the best permanent results.

In all cases the right kidney pouch and the area of the cystic duct must be drained, either by stab puncture through the right loin or from the anterior wound.

If the whole abdomen is flooded with bile, as much of it as can be mopped up by hot swabs should be removed and a suprapubic tube (inserted through a separate puncture) should be pushed to the bottom of the pelvis. In every case Murphy's rectal infusion in the Fowler position must be the after-treatment.

Where the bile has collected in the right iliac fossa, in the form of an appendix abscess (Case V), the incision should be lengthened downwards, the bile and pus mopped out, and the area drained by tube through a puncture over the right anterior superior spine or through the anterior wound.

Whatever the procedure adopted it must be gently and quickly carried out. Washing out the peritoneal cavity cannot be done effectually at any time or under any conditions, and should never be attempted. The condition of the patient may be so grave (Case IV) that very rapid drainage must be obtained and removal of stones from the gall bladder left for a subsequent operation.

Statistics.

In 3,180 cases operated upon for gall stones (McWilliams) there were 29 cases of acute perforation. In 1,000 cases operated upon for gall stones at the Leeds Infirmary there were 10 acute perforations, 1 being a perforation of the hepatic duct. McWilliams records 108 cases of perforation, and to these the cases in the writer's list must be added, and 2 cases published in Sir Berkeley Moynihan's book, *Gallstones*.

CASE I.

Seen by Sir Berkeley Moynihan in consultation with Dr. Hind of Harrogate. The writer assisted at the operation.

Mr. J., aged 60, had resided in Ceylon for thirty years. Enjoyed good health until three years ago, when he became dyspeptic, constipated and depressed. Two and a half years ago he developed diverticulitis of the sigmoid with obstruction and abscess, and underwent an operation.

During the time of this illness he complained of intense pain in the right hypochondrium, and it was feared there might be some further suppuration of the nature of that dealt with at the operation for diverticulitis. He was treated with *B. coli* vaccines, and was much relieved.

In April, 1912, he had a return of his old trouble, dyspepsia and constipation, and was treated by a pill of aloes and nux vomica.

Suddenly on April 30th he was seized with great colicky pain and sickness, and for twelve hours could not locate the trouble. The abdomen was much distended, but there was no marked resistance. He then had rigors, the temperature reaching 106° F. Distinct tenderness over the gall bladder developed, and on May 1st Sir Berkeley Moynihan saw him and decided to wait.

On May 4th Sir Berkeley operated. An incision was made vertically over the upper part of the right rectus, the muscle being split longitudinally. Much free golden yellow bile escaped. The area of the gall bladder was shut off by huge masses of intensely engorged omentum which were adherent by lymph to each other and to the liver and gall bladder.

After separating the adhesions a small circular perforation was seen, about 2 mm. in diameter, on the inferior surface of the fundus of the gall bladder. The walls of the gall bladder were thinned away at this part so that the edges of the perforation were thin as tissue paper, and were stained a brilliant orange red. Yellow bile leaked in a slow stream from the opening. The aperture was enlarged, many small stones were removed, and a tube fixed into the gall bladder. There was no marked enlargement of the gall bladder, and removal would have been difficult. The area of the right kidney was drained and the abdomen closed.

The patient made an uninterrupted recovery.

CASE II.

Operation at Leeds General Infirmary by Mr. Collinson.

Mr. E. C., aged 54. At 4 a.m. on October 24th he was seized with a sudden umbilical pain. He could not rest, got up,

partially dressed, and went downstairs. He had bad pain all day long, and vomited once. Next night he had very little sleep, and several attacks of colicky pain in the body; opium was given. Next morning (October 25th) the pain was no better, abdomen getting swollen, bowels not open. At 3.30 p.m. ill, pinched, abdomen distended and tender all over, especially in the upper zone. Liver dullness present.

The history, as far as he was able to give it, was that he had been for some years subject to attacks of pain in the upper abdomen, not related to food, and associated with vomiting. He was a painter by trade, but there was no blue line and the knee-jerks were present.

The diagnosis of perforation into the peritoneum (? nature) was made.

Operation.

Incision vertically over the right rectus, about opposite the umbilicus. Appendix area explored and found normal; marked spasm of the small intestines; some free bile seen at the root of the mesentery. Incision lengthened upwards, and much bile found free in the peritoneal cavity; only one flake of muco-pus noted. The gall bladder was small and very adherent to the omentum; there was a small perforation of the under part at the fundus, at a spot where there were no omental adhesions. The opening was enlarged and many stones removed, and the gall bladder was drained. Large tube drain through a separate opening in the right kidney pouch.

The patient recovered and went home on November 16th.

CASE III.

Operation at Leeds General Infirmary by Mr. Collinson.

G. H. C., a man aged 62, was in a most wretched condition on admission, and was incapable of giving any history whatever.

In addition to the abdominal condition he had marked aortic stenosis, and operation was undertaken under intraspinal injection of stovaine.

Temperature on admission was 99°, pulse 110, and respirations 33. Abdomen very distended, and moved very slightly on respiration.

Operation was performed at once (May 1st). A long incision was made over the right rectus; there escaped a quantity of yellow fluid, which was part of a collection around the gall bladder. This collection was shut off by adhesions of small intestines. A few small gall stones were found loose in the peritoneal cavity. There was a small perforation on the under surface of the gall bladder. The gall bladder was drained by tube, and the area of peritoneum invaded by bile was drained by another tube. The patient lived until May 9th.

Post-mortem, marked aortic stenosis, coronary atheroma, fat necrosis, and general peritonitis were found.

The three following cases were operated upon by the writer.

CASE IV.

Seen in consultation with Dr. Hall of Dewsbury.

Mr. M., aged 64, had some history of indigestion, but none of severe abdominal pain at any time. On April 25th, 1912, he was feeling a bit "run down," with vague abdominal discomfort. During that night he woke with severe pain in the body, and on the morning of April 26th Dr. Hall saw him. At that time he had very severe pain all over the body and was rolling about the bed in agony, the abdomen was markedly distended and very tender all over, the pulse was 120 per minute, and the bowels were open. On April 27th there was definite localized tenderness over the appendix and less pain and tenderness elsewhere.

I saw him on April 28th. He was a very stout, plethoric man, and he lay in bed on his back with his knees drawn up and apparently in comfort. His face and lips were livid and he had just a suggestion of jaundice. His abdomen was enormously distended and respiratory movements were only slight. There was general tenderness, but definite, localized, exquisite tenderness over McBurney's point. There was dullness in the right flank and a fluid thrill over the right half of the abdomen. The pulse was small and 130 per minute. Rectal examination revealed some fullness high up on the right side. Liver dullness was normal and he had not had a rigor. "Appendicitis with peritonitis" was diagnosed and possibly a large abscess.

Operation.

Immediate operation was decided upon. He was far too ill to be removed, and only very limited accommodation was available and very poor light. Under ether anaesthesia a vertical incision was made over the lower part of the right rectus and the muscle split. In cutting through the fat and deep fascia it was noticed, and remarked upon, that there was oedema of the tissues and obvious staining by bile pigments.

On opening the peritoneum a very large quantity of yellow bile mixed with mucus and purulent exudate escaped, the mixture looking like yellow pea-soup. In it were many small, faceted black gall stones. The incision was rapidly lengthened up to the costal margin, and large quantities of thick yellow fluid escaped, with dozens of gall stones. Innumerable small stones lay on the neighbouring intestines. There were no adhesions, but much flaky lymph and stringy mucus.

The gall bladder was one and a half times the natural size, and was intensely red. On its lower surface, near the fundus, was a small circular perforation about 3 mm. in diameter; its edges were a brilliant golden yellow. Large numbers of stones lay in the gall bladder and others in the cystic duct. The perforation was enlarged by cutting with scissors up to the fundus and as many loose stones as could be got quickly out were removed. A tube about ¾ in. in diameter was stitched into the gall bladder. Some stones were picked off the intestines, but many were left, and much fluid was mopped away. From the lowest part of the wound a long, wide tube was placed as a drain to the bottom of the pelvis, and the wound closed in layers.

He was given continuous rectal infusion and fixed in the Fowler position. He made an uninterrupted recovery. The whole operation occupied thirty-five minutes. Large numbers of stones came through the tube, and for many months he had a mucous fistula from the gall bladder, but this is now healed.

It is nearly certain that had I attempted to remove the gall bladder in this case or to remove the stones in the cystic duct he would have died on the table. It was of great interest to note that some weeks after the operation the patient explained that the very first onset of his pain had been over the region of the gall bladder.

CASE V.

Seen in consultation with Dr. Orford, Pontefract.

Mr. W., aged 60, for many years had had bad indigestion, characterized by distension and frequently relieved by vomiting. On several occasions he had severe pains under the right ribs and occasionally some shivering. He had been jaundiced on one occasion.

Dr. Orford saw him on October 16th, 1912, and found him suffering from bad pain over the gall bladder and occasional vomiting. There was marked localized tenderness and some rigidity. Pulse was 80 per minute, temperature was 100° F., and respirations 30.

On October 17th he was worse, the pulse had gone up to 85, and the temperature had fallen to normal, but he looked ill. He complained of a catchy pain in the right ribs when he breathed deeply, but he easily rolled about in bed and sat up to have the back of his chest examined. There was definite rigidity over the upper half of the right side of the abdomen and exquisite tenderness. The right flank was resonant. The diagnosis of acute cholecystitis was made.

On October 18th he was removed to a nursing home in Leeds in much the same condition. Perforation of the gall bladder was now definitely suspected.

On October 19th he was better, the pulse falling to 80 and the temperature being normal. The rigidity and tenderness were restricted to the gall bladder region.

On October 20th there was some bile in the urine and he was slightly jaundiced. The bowels were opened and the tenderness over the gall bladder was less marked. There was tenderness and some rigidity over the appendix area.

From October 21st to 23rd he improved daily and a definite lump gradually made itself apparent in the appendix region, the size of an orange. Temperature rose gradually to 100° F. Tenderness over the gall bladder less marked.

Operation.

On October 24th an incision was made vertically over the middle half of the right rectus, splitting the muscle. There were recent plastic adhesions and intense engorgement of the intestines. On separating the adhesions clear bile escaped from the region of the gall bladder. The incision was lengthened up to the costal margin.

The gall bladder was of normal size, but thick and deep red in colour. On the under surface near the fundus was a clean-cut circular perforation 3 mm. in diameter, its edges pigmented a golden yellow. From it exuded clear yellow bile and some stringy mucus. Cholecystectomy was easily performed; the gall bladder contained many small faceted stones. Three or four spots of fat necrosis were noticed in the omentum. A large drain, reaching the stump of the cystic duct and the right kidney pouch, was introduced. Examination nearer the appendix region revealed a large collection of bile and pus, not unlike pea-soup, shut off on the lower, inner, and outer sides by recent adhesions, but open to the upper side by a channel leading up on the outer side and in front of the ascending colon to the gall bladder. Along the channel was yellow bile. The cavity was mopped out and drained by a tube through the lowest point of the wound.

He made an uninterrupted recovery.

CASE VI.

When admitted to the Leeds General Infirmary the patient was most gravely ill, pulse 160 per minute, respirations 36, temperature 101.5° F. He was a very big, stout man, aged 49, and was unable to give much history. He said he had pain all over the body and was vomiting frequently. For many years he had suffered from pains under the front of the ribs on the right side and constant indigestion. Fourteen days before admission he had a rigor, but no very bad pain; seven days later he began to have bad pain over the gall bladder which spread all over his body.

The abdomen enormously distended, moving well except over the right hypochondrium. There was exquisite tenderness over the gall bladder where there was some resistance suggesting a solid mass. Diagnosis of acute cholecystitis with possibly perforation was made.

Operation.

An incision was made vertically over the upper part of the right rectus splitting the muscle. A little clear free fluid escaped from the peritoneal cavity, but no bile. Plastic adhesions between coils of congested and distended intestine, confined to the right hypochondrium. Stomach, duodenum, hepatic flexure of colon adherent to the gall bladder by plastic lymph.

On separating the adhesions, the gall bladder was seen to be twice its usual size, deep maroon in colour, and presented five or six patches of black gangrene over which the peritoneal coat was intact and shiny. The patches of gangrene were each about the area of a sixpence.

The most remarkable appearance was over the region of the common duct, where there was a large swelling the size and shape of a banana looking like a full leech or a coil of gangrenous intestine; behind it the finger could be easily passed into the foramen of Winslow. There was no perforation into the general peritoneal cavity and no free bile.

The gall bladder was quickly and easily removed, and an incision made into the peritoneum over the position of the common duct. Free black bile escaped, probably about an ounce. The common duct lay in its usual position and was pale red in colour. No perforation of it could be found, and it was its usual size and lay free, stripped of its peritoneal coat by the layer of bile. (See diagram.)

The region of the cystic duct was drained, and the right kidney pouch was drained separately by a large tube through the right loin. The wound was closed.

A, Retroperitoneal track of bile. B, Common duct. C, Duodenum.

The whole operation occupied thirty-five minutes. He was most gravely ill throughout, and he died some little time after the abdomen was closed.

Post-mortem Examination.

There was very rapid decomposition; the common duct was reduced to a black-green pulpy mass, but there was no break in its continuity and no sign of a perforation. No stones were found.

There was a small recent abscess in the upper pole of the right kidney. The pancreas was soft and almost diffluent.

The gall bladder contained twenty-two stones. The wall was thick and intensely red. There were ten definite areas where the mucous membrane was black and thinned away until in some parts the peritoneum only remained.

In all the part covered by peritoneum there was no perforation, and none could be found in the portion devoid of peritoneal covering; curiously enough there was not a single patch of gangrene on this portion of the organ.

From one of the patches of gangrene on the under surface near the fundus, starting from the mucous surface, a probe could be passed under the peritoneal coat towards the cystic duct and along it.

It is a most unfortunate fact that the specimen was misplaced by the Pathological Department and cannot be found.

It is difficult to account for the presence of bile under the peritoneal covering of the common duct except on the grounds of a perforation. Whilst it was unfortunate the common duct underwent such rapid decomposition, it was not so bad but that one could come to a definite decision that no leakage had occurred from it. Gangrene of the duct was not present at the time of operation, because the duct could be seen looking pale red when the black bile had drained away.

Is it possible that bile had passed down from the gall bladder, through the breach in the mucous membrane at the gangrenous spot, along the track where the probe passed, and so to the cystic and common ducts?

It would appear no explanation other than a subperitoneal perforation of the gall bladder can be offered.

My thanks are due to Sir Berkeley Moynihan and to Mr. Collinson for giving me permission to use their cases.

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THE INCIDENCE OF OPHTHALMIA NEONATORUM IN LONDON.

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THE first official statement on the incidence of purulent conjunctivitis in the newborn in London appears in the recently issued report of the Medical Officer of Health of the London County Council. The report is for the year 1911, and it bears the printed date of February 18th, 1913.

The information published in the report is the outcome of the order which made this disease notifiable within the London County area. This was done in March, 1911, by an order extending the provisions of Section 55 of the Public Health (London) Act, 1891, to ophthalmia neonatorum. Prior to this date there was no authoritative knowledge of the incidence of the disease in the population at large, and it was spoken of as "rare" or "common," just as cases bulked largely or otherwise in the minds of medical men and social workers who came in contact with them in maternity hospitals and in private practice. It was obviously impossible to obtain general information for a whole community without official action. Indeed, no attempt seems to have been made to obtain such information except on one occasion, when by the courtesy of several doctors in private practice in one quarter of London I was able to gather and publish statistics concerning some 12,000 births.[1] It will be of interest to put these private returns made in 1906 alongside the official returns for 1911.

The Council's notification order came into force on March 13th, and from that date until the end of the year 673 cases were notified (p. 82). The births in London for 1911—less stillbirths (corrected)—are given (p. 6) as 100,830. To obtain the percentage incidence of the disease it will be necessary to compute the probable figures of the disease for the whole year, instead of as is given, for nine and a half months. There is no reason to suspect any material variation in the incidence of the disease in different seasons of the year. The corrected figures for the year would be 850 cases. Compared with the number of births given, that means an incidence of 0.843 per cent. This figure is very nearly the same as that obtained in my private census for 1906; in 12,680 live births there were 110 cases of purulent conjunctivitis, or an incidence of 0.867 per cent.

The point of greatest importance is the number of cases in which the disease is productive of injury to or loss of sight. The Council's report states that the condition of 278 cases occurring in the practice of midwives was followed out so that in most the ultimate issue was known. There was a wastage, however; 17 children died whilst suffering from the disease, and in 30 instances the parents removed, and could not be traced. There are left 231 cases; of these, 218 were reported to be completely cured; in 13 cases there was impairment of vision.

The rate of injury is, therefore, 13 in 231, or 5.6 per cent. It is interesting to compare this with the private return. In that I found 6 children with permanently damaged eyes out of 110 affected, or an injury-rate of 5.4 per cent.

Details of the 13 cases in which the sight was affected are given:

Blind in both eyes	3
Blind in one eye, other damaged	1
Blind in one eye, other uninjured	4
Both eyes damaged	2
One eye damaged	3

There was a history of vaginal discharge in the mother in 7 of these cases. In every case except one the eyes were cleansed with some antiseptic immediately or soon after birth; where there was delay it was due to the birth of the child before the arrival of the midwife. In the single case in which cleansing is not noted the disease did not appear until the eleventh day after birth, so that it is almost certainly a secondary infection. Efficient medical help was obtained with promptitude in most cases. There was delay of three, five, and, in one case, ten days, owing

to the opposition of parents or neglect of midwives in giving warning.

Of the 278 cases occurring in the practice of midwives a number of details of interest are given.

Mortality.

Whilst the disease was in progress 17 infants died. It is not possible to tell from the infant mortality statistics given in the earlier pages of the volume whether or no this death-rate is like or in excess of that found in healthy children, for the death-rates or infant mortality given are for infants under 1 year old. The mortality recorded is 12.9 per cent.; the death-rate among these new-born diseased children was 6.9 per cent., but the two figures are not comparable. It would be of interest if the death-rate of infants, say, of less than 1 month of age could be obtained for comparison. Lobenstine and Harrar[2] showed that infants born of gonorrhoeal mothers were less viable than those born of healthy mothers.

Date of Onset.

The Council's report gives the day of the puerperium on which the signs of inflammation were first noticed:

Day ...	1	2	3	4	5	6	6	7	8	10	Later.	Not Ascertained.
Cases..	18	23	38	33	28	29	18	23	19	11	26	4

Condition of the Mother.

A history of vaginal discharge was obtained in 111 instances—that is, in 40 per cent. of the cases.

Prophylaxis.

The antiseptics used for the child's eyes at birth or as soon afterwards as possible were: Boracic lotion in 125 instances, mercury perchloride (1 in 4,000) in 102, silver nitrate (a 1 or 2 per cent. solution) in 27, protargol in 1, and mercury biniodide in 1 instance; in the remaining 22 cases sterile water was used. An interval between the birth and the use of an antiseptic occurred in 50 cases owing to the fact that the infant was born before the arrival of the midwife.

The report gives details of the methods adopted to warn midwives of their duties in regard to this disease, and the opportunities provided for them in the matter of further education and training.

Nursing and Treatment.

The difficulty of nursing the affected children early became manifest. The midwives could not be in attendance all day, and in any case their attendance ceased before the child was relieved. "The Council felt therefore that risk was being incurred by allowing cases of inflammation of the eyes to receive no more attention than was bestowed on them by the people living in the house." Four nursing societies were approached, and agreed to undertake the duties of attending to the infants under the direction of the medical practitioner called in. During the year their services were made use of in 68 cases.

The Council had under consideration the question of hospital treatment for severe cases, and an endeavour was made to secure accommodation for mother and child (infant), so that while the child was being treated it would not be deprived of the advantage of being breast-fed. The ophthalmic hospitals and the general hospitals had difficulty in providing such accommodation, but in some instances both mother and child were admitted to the Poor Law infirmaries. Of the cases occurring in the practices of midwives during the year, in 12 instances mother and child were admitted to hospitals or infirmaries, and in 20 the child alone was admitted; 101 other cases were treated by the ophthalmic and general hospitals as out-patients.

This report and the official figures given therein may be taken to settle once and for all the question whether or no it is advisable to promote the compulsory use of prophylactic measures; and by that is meant the use of a silver salt or other efficient preparation immediately after birth. The proposition has been frequently mooted. Strong opposition has been raised against the proposals both in this country and in America. After a discussion on the subject at the Obstetrical Society in London (1903), a strenuous protest appeared in the BRITISH MEDICAL JOURNAL by Sinclair. The objection to the proposal was based on two grounds—(1) that the risk of the procedure outweighed its prospective advantages, seeing the incidence of such blindness was small; (2) that it was an unwarrantable stigma on the parents and an interference with the liberty of the subject.

In 1892 a special committee of the American Ophthalmological Society presented a report calling for legislation for the compulsory use of prophylaxis in almshouses and State institutions, and recommended the routine use of silver nitrate, in 2 per cent. solution, for all newly-born children. But there was also presented a strong minority report in which disapproval of compulsory legislation was expressed. It asserted that there was not sufficient data of the frequency of such blindness in the United States; that the statistics of other countries, especially Germany, are of doubtful value or positively misleading.

This was the position that I adopted in my little book published in 1907, and therein were given the figures which supported that contention and which are quoted above. The Council's figures are in entire agreement with that position. It is quite certain that no Legislature in the world would entertain for a moment an agitation for the compulsory use of a measure for the prevention of a disease to which no child need be liable, for it is not a disease that every and any one may contract; and which even in a huge conglomeration of human beings like London is found to affect less than 1 per cent. of the newborn. It is quite true that the effect of the disease is lamentable; it does not kill, but it blinds, and that in my experience is the worst of the possibilities. It does this in whole or in part in about 1 child in every 2,000 born. But the knowledge of the condition and the light that is thrown on the work of the obstetrician, by notification and the publication of returns such as these, is as likely, probably more likely, to ensure a minimum incidence of the disease or of damage arising therefrom than is the universal use of potent antiseptics, with the possibility that they may be carelessly used or used to cover dirty practice.

There is one other point in the report deserving of special mention. In 1807, at the time when microbes were unknown, and when the cause of the disease was so obscure that most of our profession thought that all would be well if the baby's eyes were protected from draughts or bright light, Dr. Benjamin Gibson,[3] of Manchester, gave the earliest recommendations for the prevention of the disease; they are such that they cannot be bettered now. In fact, this report is a complete vindication of the measures he proposed. His rules were:

1. The leucorrhoea of the mother ought, if possible, to be cured during pregnancy.
2. When this has not been done, the noxious secretion ought to be removed from the vagina during delivery.
3. The infant's eyes ought, immediately after birth, to be cleansed with a fluid which either removes the noxious matter or is able to prevent its injurious effects.

I quote Gibson's recommendation because of the emphasis he lays on the necessity of curing the mother. His implication is that the disease ought, if possible, to be made impossible by proper attention to the maternal passages. The Council's report shows that in 40 per cent. of the mothers whose babies contracted the disease there was a history of vaginal discharge.

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[1] *Preventable Blindness*, London, 1907. [2] *Bulletin of the Lying-in Hospital, New York*, December, 1906. [3] *Edin. Med. and Surg. Journ.*, 1807, p. 160.

OFFICIAL statistics show that in 1911 there were in France 20,809 doctors, 2,848 dentists, 11,589 pharmacists, and 13,066 midwives.

A BILL regulating the importation and sale of foreign pharmaceutical products is now before the Cuban Parliament. It provides that foreign specialities are not to be allowed to circulate in Cuba unless the agent entrusted with the sale of them is a Cuban pharmacist. Further, the specialities must conform to the following conditions: (1) The label must indicate the components to which the product owes its therapeutic activity, and the quantity of these components; (2) the Cuban Academy of Science must satisfy itself that the preparation really possesses the properties claimed for it; (3) a certificate will be required showing that the product has been made in laboratories which work according to the law of the country from which it comes.

A PRELIMINARY NOTE UPON AN EXPERIMENTAL INVESTIGATION OF CONCUSSION OF THE SPINAL CORD AND ALLIED CONDITIONS.

BY ALAN NEWTON, M.S.MELB.

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SIR VICTOR HORSLEY, in whose laboratory it has been my privilege to work, suggested the subject of this research, devised the methods and himself performed some of the experiments. For these and many other kindnesses I feel that I cannot adequately express my gratitude.

INTRODUCTION.

The term "concussion of the spinal cord" requires definition, for at least two separate meanings have been attached to it.

In the first place it has been used to denote a clinical condition comparable with cerebral concussion in which no structural lesion has taken place and from which the subject quickly recovers. Clinical and anatomical evidence has been adduced to disprove the existence of such a state in the spinal cord, and to show that the symptoms are due to organic change. Thus the expression has been more frequently employed in connexion with sudden injury to the spinal cord, and such is its use in the present instance, in which attention is mainly directed to the results of slight concussion.

The medico-legal importance of injuries resulting from railway accidents first directed general attention to this subject, and soon the symptoms were grouped together as of a definite clinical entity, "Railway spine," although it was realized that less sensational and remunerative accidents in everyday life often occasioned a similar condition. In addition to signs indicating involvement of the spinal cord, the cases often presented various psychical phenomena, and difficulty was experienced in differentiating them from those of pure malingering, so much so that Erichsen[1] wrote: "An extensive experience in railway accidents will probably impress the observer more with the ingenuity than the honesty of mankind."

The subject has since been extensively investigated from the clinical standpoint, but it is impracticable here to give a complete review of the literature, though mention must be made of the work of Charcot and Oppenheim. Oppenheim[2] says that though it cannot be denied that railway accidents, for instance, may give rise to organic changes in the cord without causing severe external injury, such a result is exceedingly rare, and that the affections of the nervous system occurring after them should, for the most part, be regarded as functional neuroses.

In his opinion traumatic neuroses are the effect of mental and physical shock, giving rise to molecular changes in the nervous system. He points out that this view does not exclude the possibility that minute organic changes (in the vessel walls—disintegration of myelin in single fibres, etc.) may exist and form the basis of individual symptoms.

Charcot,[3] however, held that the condition is produced by auto-suggestion, while Strumpell[3] affirms that the idea of making money out of the accident is the chief cause of the neurosis.

Unfortunately opportunities for pathological examination are few, but upon such observations as have been made many neurologists have based the opinion that actual organic changes are present more frequently than was supposed, and that the spinal cord is very susceptible to slight injury, although in some cases the results of such injury may not be obvious until time has elapsed (Warrington).[4]

The experimental literature on this subject is scanty. Schmaus,[5] however, has conducted examinations upon kittens, and found that blows upon the spinal column produced sensory and motor interference in the spinal cord. Subsequent examination revealed no lesion of the bone and no meningeal haemorrhage. Capillary haemorrhage in the cord was rare, but swelling of axis cylinders and other slight changes were seen. He believes that as a result of external violence forceful movement in the cerebro-spinal fluid occurs, producing slight injury to the spinal cord. These results have been confirmed by other workers.

Intimately connected with the question of changes in the cord following concussion are those dealing with spinal compression and anaemia. These factors are of importance in connexion with spinal tumours and vertebral caries, as, for instance, the reason for the persistence in caries of movements of the toes, after the disappearance of all other lower limb movements, is still doubtful.

In this investigation, therefore, an attempt has been made to determine the effect upon the exposed cord of varying degrees of concussion and compression, and also the effect upon cord function of obstruction of the aorta.

METHODS.

Experiments were performed upon fifty animals—three monkeys, eight dogs, and thirty-nine cats. Cats and monkeys were employed for the concussion and compression experiments, but dogs were used, because of the larger size of their vessels, in the aortic obstruction experiments. All the animals were kept free from operative sepsis. The anaesthetics used were mixtures of chloroform and ether.

The spinal cord was exposed by a laminectomy between the fourth and eighth dorsal vertebrae, but the dura was not opened except in two cases of slight compression, for two and five minutes respectively.

Concussion.

The momentum of a glass rod 8 mm. in diameter, weighing 50 grams, falling upon the cord, caused the concussion. The rod was removed immediately after the impact, accuracy of direction being obtained by means of a glass tube 1 cm. in diameter, through which the weight fell. This tube was maintained in a vertical position above the exposed cord by means of clamps. Variations could be introduced by altering the height from which the weight fell or the time during which the animals were allowed to recover from the concussion.

Table Indicating the Nature of the Experiments.

Number of Animals.	Height of Concussion, in cm.	Time before Cortical Excitation, in Days.
2	1	3, 5.
6	2	2, 2, 3, 4, 4, 4.
1	5	1.
7	10	0, 0, 1, 1, 4, 5, 10.
5	20	1, 3, 3, 11, 12.
2	30	9, 11.
7	40	0, 1, 1, 4, 5, 6, 14.

Twelve animals died after blows from heights of 10 to 40 cm., the number of deaths increasing in direct ratio to the height. Four of the deaths occurred in the first twenty-four hours, marked distension of the urinary bladder, producing respiratory interference, being constantly present. Owing, no doubt, to paralysis of the sphincters and infection from the faeces, a condition of purulent cystitis, with numerous semi-confluent submucous haemorrhages in the bladder wall, was present in the remaining eight animals, death occurring between the third and eighth days.

Compression.

In compression experiments the same glass rod, weighing 50 grams, was gently placed upon the exposed cord and allowed to remain thereon for varying times. It was maintained in position by the glass tube already mentioned.

Interference with the Circulation of the Cord.

At first the aorta was obstructed by means of a clamp applied through an incision in the thoracic wall, but this method was abandoned for one in which a distensible rubber tampon was passed down the lumen of the aorta from an opening in the right carotid artery.

The instrument consists of a graduated metal tube (No. 1 catheter size) with a slight terminal curve. Surrounding this tube at this curve for 2 cm. of its length and

extending almost to the distal extremity of the instrument is a rubber tampon, which could be inflated by an air pump attached to the proximal end of the tube. The mere presence of the instrument in the vessel caused no perceptible change in femoral pulsation, which, however, at once disappeared upon inflation, returning immediately at the conclusion of the experiment.

In this method the desired end is attained with a minimum of operative interference, a small incision in the neck being all that is necessary; no question of the influence of defective aëration can arise, and artificial respiration, which has been used to counteract the possible influence of the latter complication in the transthoracic method, can be dispensed with.

It was found that, though obstruction for fifteen minutes at the level of the twelfth dorsal vertebra produced no fatal effects, after obstruction for thirty minutes in this region four dogs died in the first twenty-four hours. Recovery, however, followed when the aorta was obstructed for this time immediately distal to the renal vessels.

Method of Testing the Effects.

Motor conduction was tested by faradic excitation of the hind limb area of the motor cortex. In many experiments the skin was removed from the limb in order to differentiate contraction in the different muscle groups.

A Kronecker coil, with 6 S.R.M. cells in the primary circuit, was employed in all cases. The excitation was bipolar, the electrodes being 1 to 2 mm. apart.

Sensory conduction was tested by the reflex effect upon respiration, and, in some cases, upon the blood pressure of stimulation of the sciatic nerve.

Results.

The Effect of Concussion upon the Conduction of Motor Efferent Impulses.

At the outset it was necessary to determine what degree of violence inflicted upon the exposed spinal cord could be described as "slight concussion." To this end experiments were performed in which the weight of 50 grams was dropped upon the cord from heights of 40, 30, and 20 cm. It was soon seen, however, that such concussion was too severe in that it abolished motor conduction immediately, and, further, that no return thereof could be demonstrated by cortical excitation after periods varying from eleven to fourteen days. The animals exhibited paraplegia with increased knee-jerks and double extensor contracture. Yet, despite this marked disturbance of function, the surface of the cord upon inspection immediately after the impact did not appear to be greatly injured. It is true that slight subdural haemorrhage was usually present, but this was not due to rupture of the larger superficial vessels.

However, it was obviously necessary to lessen the degree of the concussion, which was then inflicted from heights of 10 and 5 cm. Here again the disturbance of conduction was considerable, for cortical excitation produced no response distal to the injury after four to five days had elapsed, although in one cat, of 10 cm. concussion, conduction was demonstrated after ten days.

Further reduction in the degree of concussion was decided upon, so that the height was diminished first to 2 cm. and then to 1 cm. This extremely feeble blow produced no visible effect upon the surface of the cord, but nevertheless the disturbance of efferent conduction was pronounced.

After 2 cm. concussion no conduction could be demonstrated after the lapse of two days. After three and four days, however, a very interesting condition was apparent, in that cortical excitation was followed, not by the usual movement of flexion, but by extension of the hind limb. Increased stimulus naturally produced epileptic clonus in the fore limb and trunk anterior to the mid-dorsal region, but distally the sole effect was to increase the movement of extension, clonus being completely absent. In this instance a dissociation was clearly effected, the cortical character of the response was lost, and only spinal phenomena resulted.

Three to five days after 1 cm. concussion a similar result was produced by excitation, but in this case a further important difference was present, as increase of the excitation stimulus produced, not increased extension, but flexion of the hind limb. If, however, the cortical excitability was lowered by deep anaesthetization, the increased stimulus again produced extension. In short, extension occurred during deep anaesthesia or as the result of a weak stimulus, but flexion followed reversal of either of these conditions. This interesting reciprocal demonstration is worthy of further investigation.

Experiments on the Cord in the Monkey.

Forty cm. concussion abolished motor conduction in *Macacus rhesus* as completely as in the cat, so that concussion from 2 cm. was performed in two monkeys. After four days cortical excitation of the hind-limb area was followed, not only by the usual movement of flexion of the opposite limb, but by a movement of progression—that is, contralateral flexion, with marked ipsolateral extension of the hind limbs.

Summary.

Slight concussion, producing no macroscopic and very little microscopic changes in the spinal cord, nevertheless produces marked alteration in motor conductivity. This is at first completely abolished, and later is so changed that, in the cat, excitation is not followed by the flexion movement which is predominantly represented in the cortex, but by the "lower centre" movement of extension, and, in the monkey, by the spinal movement of progression.

An attempt was made in these experiments to discover if, in the cat, conduction remained to one muscle group after it had been abolished to all others—that is, if a condition could be produced comparable with that already mentioned in connexion with vertebral caries, where slight toe movements often remain after all others have disappeared. Though such a condition has not yet been produced in these experiments, flexion of the ankle was in all cases more marked than similar movement at the knee and hip, and the march of flexion was in the order of ankle and toes, knee, hip.

The Effect of Compression upon Motor Efferent Conduction.

It was found that the compression caused by gently placing a weight of 50 grams upon the cord of a cat was sufficient to arrest conduction immediately. Here the question of the part played by vascular obstruction is important—that is, Was the arrest of conduction due to anaemia of the motor fibres?

Ehrlich[6] and others have shown, however, that degeneration after arrest of circulation in the cord is limited to those fibres which arise from cells situated in the anaemic area, and that fibres of the long tracts escape degeneration even if deprived of blood for one hour. It would appear, therefore, that the motor fibres are very sensitive to compression, irrespective of changes produced in blood supply.

After removal of the compression conduction in the cord returns, after an interval varying directly with the duration thereof, and the degree of interference remaining after eleven to fourteen days depends upon the same factor. This will be seen from the following table:

Time of Compression.	Lapse of Time before Excitation.	Effective Stimulus (Kronecker's Scale).
2 minutes	11 days	1,000
5 ,,	11 ,,	2,000
30 ,,	12 ,,	3,000
45 ,,	14 ,,	6,000

The Effect of Concussion upon Sensory Afferent Conduction.

Although after concussion of the spinal cord of the cat by 50 grams falling from heights of 30 and 40 cm. no motor or efferent conduction could be demonstrated, yet it was found that changes in respiratory rhythm could still be induced by faradic stimulation of the sciatic nerve.

It would appear, therefore, that sensory conduction remains after concussion that has quite abolished motor conduction—a result which is in accordance with clinical evidence.

Experiments employing variations in blood pressure as a guide to sensory conduction have as yet proved less definite, but point to the same conclusion.

Anatomical Changes in the Cord produced by Concussion and Compression.

After concussion by 50 grams falling 1 and 2 cm. the changes in the cord at the point struck were trivial. They consisted of small haemorrhages in the grey matter, usually in the basal region of the posterior cornua or in the posterior grey commissure, scattered swellings of axis cylinders and disintegration of myelin sheaths. Compression for short periods produced similar changes. After more severe injuries there were more marked anatomical changes, particularly in the grey matter. These consisted, as before, in haemorrhages, with swelling of axis cylinders and disintegration of fibre sheaths.

The vessels of the cord were not occluded by thrombosis, therefore the disturbance in structure could not be attributed to thrombotic softening by secondary degeneration. Sections stained by Marchi's method displayed both ascending and descending degeneration. The number of degenerated fibres varied with the severity of concussion, but even where this had been inflicted from a height of 10 cm., the resulting degeneration was less pronounced than might have been expected from the disturbance in conduction. After concussion from 30 and 40 cm., however, the degeneration was very extensive.

Ascending degeneration particularly affected Goll's column and the direct cerebellar tracts, but after the more severe injuries the area showing degeneration extended round the margin of the cord as far as the anterior fissure. Below the lesion degeneration was seen in the pyramidal and anterior tecto-spinal tracts.

The Part played by Interference with the Circulation.

1. *State of Circulation at the Site of Injury.*—Though haemorrhages of varying extent were caused by concussion and compression, these were due to rupture of small vessels, for no thrombotic processes could be detected in the larger vessels. Apparently, therefore, there was no gross circulatory obstruction at the site of injury.

2. *The Effect of Obstruction of the Aorta upon the Conductivity of the Cord.*—The conductivity of the spinal cord rendered anaemic by aortic compression has been studied by Loewenthal,[7] in whose paper a bibliography of this subject will be found. His experiments were performed upon cats, the aorta being digitally compressed in the thorax after resection of the sixth or seventh rib on the left side. To counteract the possible effect of deficient aëration artificial respiration was maintained. He found, in the first place, that after one or two minutes stimuli reaching the anterior cornual cells produced no motor response, but that the first effect of arrest of circulation upon the functions of the spinal cord was an increase in the readiness and strength of intraneural transmission of nerve energy lasting for thirty seconds.

In certain of the animals he observed convulsive phenomena in the posterior half of the body at the commencement of ischaemic paralysis, which, in his opinion, deserved the name of "spinal fits." Also, he considered that probably every single neuron as a functional unit retains its vitality for a period exceeding fifteen minutes, but that the mechanism linking them is rapidly destroyed.

In the present experiments motor conduction in the cord could not be demonstrated by cortical excitation fifteen to thirty seconds after the arrest of circulation, which is a much shorter interval than that described by Loewenthal.

No conclusions have as yet been arrived at regarding the initial increased response to excitation, nor did any of the animals exhibit convulsive phenomena. It must, however, be remembered that in the present research a smaller portion of the cord was rendered anaemic than in Loewenthal's experiments.

The arrest of circulation for fifteen minutes at the level of the twelfth dorsal vertebra was followed in the dog by considerable paraparesis, which was obvious after twelve days had elapsed, and was most noticeable in the anterior tibial muscles. Unfortunately no dogs survived arrest of circulation for thirty minutes at this level. On the other hand, little paresis was produced by obstruction half an inch distal to the renal vessels.

It may also be mentioned that ligation of the aorta in the cat just distal to the inferior mesenteric artery produced no degeneration in the spinal cord.

It follows, therefore, that arrest of its blood supply rapidly causes a loss of conduction in the spinal cord, a result which may be reasonably ascribed to its action upon the interneuronic mechanism.

CONCLUSIONS.

The provisional conclusions to be drawn from these experiments are as follows:

1. The spinal cord is extremely sensitive to slight degrees of concussion and compression.

2. Despite the slight anatomical changes demonstrable after lesser degrees of injury, the resulting disturbance of function is considerable.

3. After concussion which has quite abolished motor efferent conduction, sensory conduction can still be demonstrated.

4. Arrest of the spinal cord circulation by aortic compression abolishes spinal cord function in from fifteen to thirty seconds.

5. These experiments support the view that there is an organic basis for the signs and symptoms of "railway spine" and allied conditions of traumatic neurasthenia.

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PSEUDO-FRACTURES OF TRANSVERSE PROCESSES.

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ABOUT three years ago I published in the BRITISH MEDICAL JOURNAL the radiograph of a man whose lumbar spine showed an apparent separation of the left transverse process of the first vertebra. In that case there was no history of injury. Since that time I have met with five other cases of a similar kind showing the same abnormality of one or more processes.

The condition seen in most of the spines referred to was a distinct gap between the outer end of the process and the base. In three of them there was also displacement of the outer end upwards or downwards, so that it was not difficult to imagine that muscular strain had fractured the process and torn away the tip. In two of the cases the bony edges of the gap were thickened and curled as though callus had been formed.

In one man the tips of the third and fourth left transverse processes were displaced downwards for quite half an inch, and in a radiograph which I published in the JOURNAL in October, 1910, the second, third, fourth, and fifth left processes were much displaced. In this last case there was a definite history of muscular strain, the man being a collier. He complained of pain on the opposite side of the spine, but, finding the condition described, he was assumed to have fractured the processes.

In the light of subsequent cases I very much doubt if this was a case of muscular strain causing fracture. In only one of the other cases I have mentioned was there any history of injury, and that was a fall on the buttocks, which could not, I think, in any way have accounted for the abnormality seen, namely, an apparent separation of the first left transverse process. In this case also the pain was referred to the opposite side.

The psoas magnus, quadratus lumborum, and erector spinae are all attached to the transverse processes, and any violent lifting strain might, of course, snap the processes at their weakest point; but one would expect, first, displacement in each case, and secondly, union of the fractured bone where there was no great displacement, and not a permanent gap.

I think that the cause of these conditions is developmental, and in support of this view there is, first of all,

the absence of any injury in almost all the cases, and secondly, the fact that the first lumbar is the most frequently affected vertebra. In one case both transverse processes of this vertebra showed a distinct gap. The

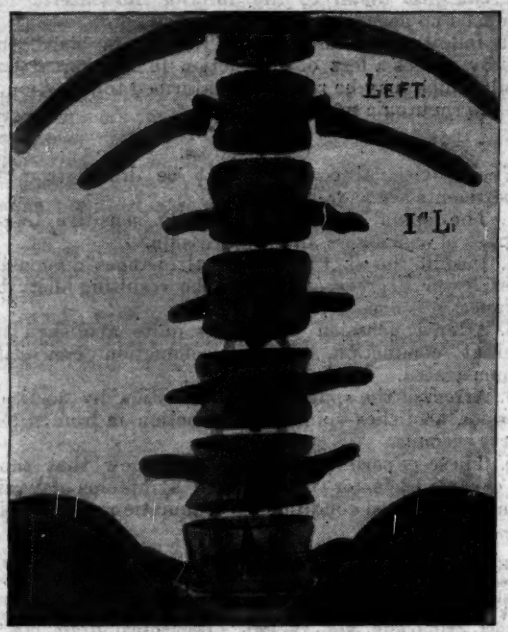

Fig. 1.—Showing a typical pseudo-fracture of the first lumbar transverse process.

epiphyses of the transverse processes are not united until the twenty-fifth year, and in the embryo there is a costal element in connexion with the transverse process of the first lumbar. Occasionally this develops into a rudimentary

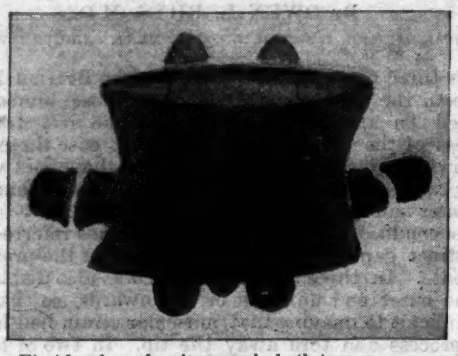

Fig. 2.—First lumbar, showing gaps in both transverse processes.

supernumerary rib, in fact the transverse processes are homologous with the first part of the ribs, and the appearance of such rudimentary ribs would correspond with the condition seen in some of these cases. Incomplete ossifica-

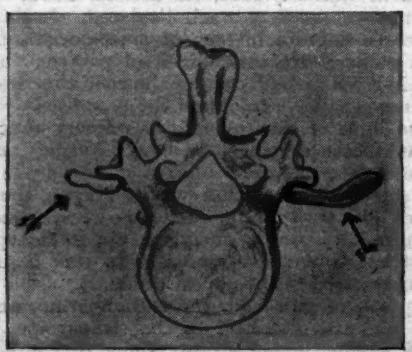

Fig. 3.—Rudimentary ribs attached to first lumbar vertebra. (After Allen Thomson.)

tion of the processes would also, of course, account for the transparent gap seen in some of the processes. All the six cases I have mentioned were those of adults, the youngest being about 20, the oldest nearly 60 years old. The importance of such abnormalities in claims under the Workmen's Compensation Act was, of course, obvious from the first, but another aspect lately came to my notice in a case where a surgeon proposed to cut down upon and remove what had been diagnosed as an ununited fracture of a transverse process.

The accompanying diagrams show the appearance seen in most of the cases referred to.

A CASE OF TETANUS TREATED WITH INTRASPINAL INJECTIONS OF MAGNESIUM SULPHATE.

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The following is the record of a case of tetanus treated with intraspinal injections of magnesium sulphate:

A boy, aged 8 years, was admitted into the Great Northern Hospital on the morning of September 3rd, 1912.

History of Illness.

Quite well previous to August 30th. On that day did not seem well, and noticed some difficulty in opening the mouth.

On August 31st had "some kind of fit" and fell down.

On September 1st and 2nd had attacks of pain, becoming rigid, but with no loss of consciousness. The jaw remained stiff after the attacks.

Previous History.

No fits previously and no illnesses. One month ago fell and cut right side of head, and three weeks ago fell and cut chin. Both cuts slight.

Condition on Admission.

Well developed boy. Conscious and understands perfectly. Mouth tightly shut. Slight "risus sardonicus." Neck rigid. No squint. Ocular movements perfect. Pupils equal and react to light and accommodation. No head retraction. Body rigid. Arms and legs stiff but easily moved and flexed. Knee-jerks present on both sides. No cuts or septic foci. The temperature was 98° F. and the pulse 112 and regular.

During the afternoon of September 3rd he had several slight spasms, during which he cried out, and became rigid, with slight opisthotonos. In the early part of the night the spasms became very frequent. In these the mouth was tightly shut, there was marked risus sardonicus and opisthotonos, and apparently great pain.

Treatment.

Lumbar puncture was then performed, and 10 c.cm. of cerebro-spinal fluid, which was under considerable pressure, were withdrawn. Without removing the needle there was then injected into the subdural space 3 c.cm. of a sterilized 25 per cent. solution of magnesium sulphate. Following this the spasms ceased, and the patient had a quiet night.

On September 4th the temperature rose to 101.4°. The pulse remained between 100 and 120. There were no spasms during the day, and the mouth could be slightly opened. There was still general rigidity. On the 5th the temperature fell from 101° to 99°. There were no spasms, and the mouth could be opened a little further. Towards evening pain in the neck returned. On the 6th the general rigidity became more marked, and the teeth could scarcely be parted. The temperature was normal, and the pulse 100. A patch of herpes developed on the lower lip. The injection of magnesium sulphate was repeated.

On the following day the temperature rose to 100°, and fell again. During this and the next few days the rigidity became gradually less, and the spasm of the jaw diminished. The patient became able to say a few words consecutively, and was able to swallow custard on the 9th. On the 10th he complained again of pain in the neck, the jaw became stiffer, and there was one slight spasm. A third injection of magnesium sulphate was given. This was followed the next day by a rise of temperature to 101°, but the spasm and rigidity gradually diminished from this date, and no more attacks of spasm occurred. The pulse fell gradually. On September 13th 10 c.cm. of antitetanic serum were injected subcutaneously.

For about ten days there was severe headache, but this passed off, and the patient was allowed to get up on September 26th, and was discharged on October 3rd.

He has since remained in good health.

Remarks.

No septic focus was found when the patient was admitted, but the diagnosis of tetanus appears undoubted. Many cases of treatment by injections of magnesium sulphate into the subdural space have been recorded. Series of cases have been published from Egypt where the organism is much more prevalent than here. The results

are claimed to be good, although it must be remembered that the percentage mortality from tetanus in Egypt is not so high as in the British Isles. The percentage mortality is less the longer the period of incubation, and where this is between three and four weeks the mortality in the British Isles is about 50 per cent. For an adult a dose of 6 c.cm. of a 25 per cent. solution in distilled water may be given. This contains 1½ grams (about 22 grains) of magnesium sulphate.

As the injection of antitetanic serum has proved to be of very little curative value in tetanus, the injection of magnesium sulphate in this manner is certainly worth a good trial. The withdrawal of cerebro-spinal fluid is doubtless an additional advantage.

I have to thank Dr. Alexander Morison, into whose ward the patient was admitted, for his kind permission to publish this case.

CAESAREAN SECTION, WITH ESPECIAL REFERENCE TO THE RARER INDICATIONS FOR THE OPERATION.*

BY W. H. MAXWELL, M.A., M.B.CAMB., F.R.C.S.ENG.

THE title of this paper was suggested to me by the circumstance that, while it has fallen to my lot to perform this operation four times during the last two years, in none of these four cases, curiously enough, has the indication for it been that for which I suppose something like 90 per cent. of Caesarean sections are performed—namely, pelvic contraction. The three cases upon which my remarks are based form an interesting series, in that each illustrates certain points of importance to the student of what one may perhaps be allowed to call the "higher obstetrics." My personal experience of Caesarean section is relatively small; I have done the operation myself five times, and have had the opportunity of assisting at it in seven other cases. My own five cases have been unattended by a fatality; of the other seven, two died, the cause of the fatal issue being, as I shall point out later, apparently identical in both. In the first case that came under my observation the operation was done by my old friend the late Mr. E. H. Douty, of King's College, Cambridge, in Addenbrooke's Hospital in 1896.

For some reason or other, in South Africa we meet with few examples of the higher degrees of pelvic contraction; hence Caesarean section and kindred operations are called for somewhat rarely. I must make it clear that in speaking of Caesarean section I refer entirely to the classical operation of Sänger and Porro—that is to say, what should be designated "anterior transperitoneal hysterotomy"—my experience of the various modifications suggested, of which "vaginal" Caesarean section seems the most extolled, being *nil*. With this premise I will proceed to a brief description of the three cases referred to.

CASE I.

Mrs. M., aged 40, married twelve years, had had four children, of whom three were living still, and two miscarriages. She was admitted into the Queen Victoria Hospital for Women early one morning in labour, and her arrival intimated to me by a telephone message from the matron to the effect that she had examined and "could not find the os." Not, perhaps, without an inward smile, I obeyed the summons, and on making a vaginal examination likewise was unable to find the os. Finally, on introducing my arm, under light anaesthesia, nearly to the elbow, the partially dilated os could be made out lying right up in the lumbar region, the impression being that a very large rounded tumour was obstructing the pelvis and pushing the cervix upwards and backwards. The patient said (in explanation of a median abdominal cicatrix) that an operation had been done a year before in the General Hospital, but she was ignorant of its nature. Telephone inquiries elicited the fact that the operation had consisted in a direct "ventral fixation," and the nature of the case was now evident, the "tumour" being merely the body of an extremely anteflexed uterus, which, in fact, was almost in an inverted position. It was fairly obvious that extraction of the child *per vias naturales*, even dead, was wellnigh, if not altogether, impossible, and my colleague, Dr. Gordon Grant, who saw the case, confirmed this opinion. I therefore decided on Caesarean section. The patient was prepared as quickly as possible, the child, a healthy full-term male, extracted without any difficulty, and the placenta and membranes removed; the womb was then drawn out through the abdominal incision and carefully sutured. Haemorrhage was negligible in quantity throughout and subsequent contraction was excellent. The mother made an uneventful recovery and was able to nurse the child as usual.

It was noteworthy in this case that, in spite of the almost incredibly anteverted position of the uterus, one was not troubled during the operation by any obvious adhesions or other sources of difficulty. Hitherto in performing the—often very useful—operation of ventral fixation or hysteropexy (in contradistinction to the "indirect" operation of Gilliam and its countless modifications) I have always had in my mind the fear lest it might—as it certainly does—interfere with subsequent pregnancy, unless great care be taken to pass all sutures well down on the anterior uterine wall; and not a few cases have been published in which recurring abortions seem to have followed the operation; but I had never realized before that such an extreme malposition of the uterus could result as to demand Caesarean section. About two years ago, however, there was published in the BRITISH MEDICAL JOURNAL[1] by Dr. Amand Routh a carefully collected series of eight cases similar to the one I have just described. I can only say that had I not seen the condition before delivery in this case I should have felt somewhat sceptical as to the validity of the indications for the operation. Possibly a similar suspicion might arise in the minds of many as regards the next case to which I have to refer.

CASE II.

Mrs. T., aged 34 years; married five years; one child living aged 4 years. Had had a "bad miscarriage" eight months previously. This patient was sent into the Queen Victoria Hospital one afternoon with a diagnosis of placenta praevia, by her medical attendant, Dr. Brebner. When I saw her soon after admission she appeared pale, but not markedly exsanguine; there were no pains and not the slightest sign of dilatation of the cervix; the general indications were those of about six and a half months pregnancy, the fetal heart being audible. She had bled a good deal, and I decided that something ought to be done on the following day.

During the night she had steady and almost continuous bleeding, and when I saw her at 6 a.m. she was in an extremely grave condition, partly, it appeared, owing to cardiac failure supervening on pretty severe haemorrhage. There was still not sufficient dilatation of the cervical canal to admit even the tip of a finger, and her condition was so bad that it seemed doubtful whether we could get her alive on to the operating table. Saline infusion (subcutaneous and rectal) improved the pulse a little, but it was tolerably obvious that any attempt at an *accouchement forcé* must result in death from the further haemorrhage inevitable during extraction of the uterine contents; I therefore decided upon Caesarean section as giving her a better chance. This was performed in the usual manner, saline infusion being kept up during the operation. The uterus was opened with the greatest possible rapidity after being drawn right out through the parietal incision; the child, followed by the placenta and membranes, was removed, with an astonishing absence of haemorrhage, in about three minutes from the start. The pulse practically disappeared, but was restored by filling the peritoneal cavity with warm normal saline solution while the stitching up of the uterine wound proceeded, another jugful being introduced just before closing the abdominal incision. The only loss of blood worth mentioning came from the placental site after removal of the uterine contents, but good contraction prevented any great loss.

For the first twenty-four hours it seemed very doubtful whether the patient would recover, as the cardiac condition gave rise to grave anxiety; but after this she improved so rapidly that she was able to sit up by the seventh day, and her recovery was not retarded by any complication. The child, of course, though delivered alive, was not viable. I should mention that the placenta, as far as a hurried examination allowed one to determine, was as nearly "central" in position as it could possibly be.

The great point of interest in this case lies in the consideration of *placenta praevia* as an indication for Caesarean section. The question has, of course, been raised often enough; and while it is usually admitted that on purely theoretical grounds Caesarean section should be the ideal treatment in certain cases, yet the general consensus of opinion appears to condemn this operation as a practicable line of treatment owing to the absence of any reliable method of gauging, in any given case of placenta praevia, how much or how little difficulty and danger the condition is going to cause. Any one who has had an even moderately extensive experience of this dangerous complication must have observed that many cases do extremely

* Read before the Witwatersrand Division of the Transvaal Branch of the British Medical Association.

well in spite of pretty severe bleeding, and that frequently the expected degree of trouble fails to materialize. The mortality *qua* the child is very high, no doubt because the very condition that plays so important a part in conserving the waste of maternal blood—namely, obliteration by thrombosis of the torn sinuses of the placenta *pari passu* with its detachment during delivery—is actually inimical to the child's chance of surviving; given, that is to say, a certain degree of placenta detachment the child, in spite of its being extracted with the utmost rapidity, is of necessity delivered in a too exsanguine condition to be capable of surviving; the drainage of blood from the placental sinuses during delivery means also, it must be remembered, drainage from the child's vascular system. It would appear from such considerations that those who have been foremost in urging the propriety of hysterotomy in cases of placenta praevia have for the most part had in mind rather the child's welfare, and if this be so the case I have recorded here is, I think, an interesting one in view of the fact that it illustrates the possibility of Caesarean section being desirable in the interest of the mother, though perhaps it must not be held to establish a precedent.

It is noteworthy that the late Mr. Lawson Tait strongly urged the adoption of Porro's operation in cases of placenta praevia, and recently I came across a remark of Professor Japp Sinclair's in 1901 to the effect that sooner or later placenta praevia would have to be considered as a possible indication for Caesarean section. Yet the statement was made only the other day, without qualification, "Placenta praevia is *not* an indication for Caesarean section"! Without wishing to emphasize unduly the value of my own judgement, I can affirm without any hesitation that in this particular case and at the particular stage at which the operation was performed no other kind of treatment would have availed to save this patient's life, though I am willing enough by all means to class such a case among those proverbial exceptions which are said to "prove the rule."

CASE III.

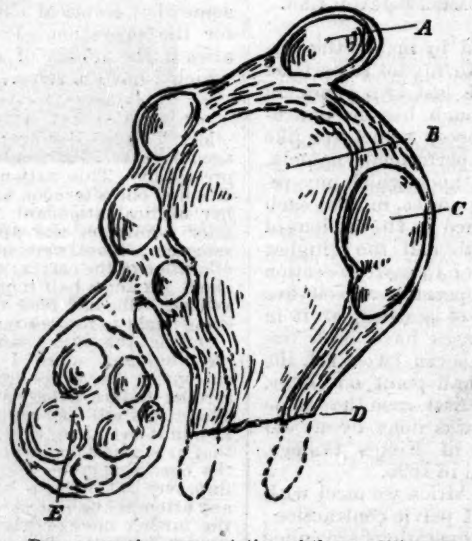
A woman, aged 42, was sent to see me when just five months pregnant for the first time, having been married two years. She complained chiefly of a good deal of pain about the rectum (though not markedly constipated) and some increased frequency of micturition. The first thing that struck one was that, while the menstrual history suggested five months' pregnancy, the uterus reached well above the umbilicus. Examination revealed a fibroid (evidently), about the size of a large orange, lying in the pelvis and pressing on the rectum, the cervix being pushed forward, considerably flattened, in front of the tumour against the pubes. It was quite impossible to push the tumour up, and at first, on account of the pain and pressure symptoms, I nearly decided on immediate operation, but was deterred from this course by the wellnigh certain prospect of having to do a hysterectomy; the position of the tumour gave very little hope of the possibility of a myomectomy with conservation of the uterine contents.

I put it, therefore, to the patient, who was extremely anxious to have a child, that it was worth while for her to try and hold on until full term, as she would then have a good prospect of a living child, and it was not likely that things would get very markedly worse during the next four months.

She followed this advice, and although at intervals of every few weeks she had rather severe attacks of pain and occasional slight bleedings, she managed to get along fairly comfortably up to within a week of the time reckoned upon for natural delivery—had that been possible—and two days before the time at which I had advised her to come into hospital I received a telephone message at 7 a.m. saying that she had arrived and was in labour.

Realizing the danger of delay, I operated at 9.30 a.m., the skin being prepared by the iodine method; no vaginal examination had been made for more than six weeks previously. The abdominal incision reached to about 2 in. above the navel, and swabs were then packed in between the abdominal wall and the uterus, the latter, which was studded with fibroids, being incised without eventration. The organ was so much distorted by these numerous tumours, more particularly by one rather large intramural fibroid in front, that it was unusually difficult to hit off the uterine cavity, especially as it was now obvious that the membranes had already ruptured, evidently before admission, labour being, in fact, well on in the first stage. I feared at first that the child was dead; but it speedily revived and did well (male, weighing 5 lb.). I removed placenta and membranes, all of which were somewhat adherent, and then drew out the uterus. It was obviously futile, in view of the large number of fibroids of all sizes studding the uterus, to attempt multiple myomectomies, and the tumour in particular which had obstructed the pelvis, as shown in the diagram,* was situated so low down posteriorly that even after emptying the womb it would have been practically impossible to enucleate it. I proceeded, therefore, to remove the uterus by supravaginal amputation; both ovaries looked healthy and were not interfered with. The cervix had undergone such a degree of dilatation that it formed quite a broad stump, which, after approximating its cut surfaces with "mattress" sutures, was covered over in the usual manner with peritoneum. Haemorrhage gave no trouble—a somewhat unusual feature, to judge by my own experience, in amputation of the pregnant uterus, the cervical region often being the seat of a good deal of troublesome oozing.

The operation took over an hour and a half, but the patient's condition gave rise to no anxiety then or later, and she made an excellent recovery; plenty of milk appeared by the fifth day, and the child likewise did well. The obstructing myoma was subserous and almost pedunculated, but could not have been pushed up, being apparently incarcerated below the sacral promontory, on the one hand pressing upon the rectum and on the other pushing the cervix and bladder forwards against the pubes.



Diagrammatic representation of the condition of the uterus in Case III. A, Small fibroid, palpable before operation. B, Uterine cavity. C, Intramural fibroid. D, Line of section of cervix. E, Subserous fibroid obstructing pelvis.

In seeking to emphasize the points of chief importance which the cases I have referred to seem to illustrate, I venture to crave the indulgence of some of my colleagues whose experience of Caesarean section is possibly more extensive than my own, and I think sufficient justification for so doing can be found in the extreme importance to the obstetrician and his patients of a proper grasp of both the possibilities and the limitations of this time-honoured method of delivery; one would be tolerably correct in asserting that in no other department of surgery have such triumphant results attended the progress of aseptic technique. But it is of prime importance to understand that the modern diminution of the mortality of the operation is due, next to the development of a proper application of the principles of asepsis, to the fact that the operation is now performed, not as a last resort—a desperate measure to save the mother's life—but either before the onset of labour or, at all events, before labour has proceeded very far. Even now, it seems to me, the cardinal point to remember is to operate early; Caesarean section done before rupture of the membranes (or, at any rate, before the end of the first stage) is one thing, Caesarean section done after the end of the first stage is quite another. Probably the mortality proper to the former operation is between 2 and 5 per cent.; that of the latter even now must be something like 15 to 20 per cent. And I must point out here that, especially if the rule be adhered to that vaginal examination just before the operation should be avoided whenever possible, one is very apt to discover that labour has progressed much further than one had suspected. In the only two fatal cases that have come under my own observation labour was found to be well on in the second stage; that is to say, not only were the membranes ruptured, but the child's head was in the vagina, and so, in order to release the head, the operator had to prolong his uterine incision down through the cervix—a proceeding which not only involves an otherwise unnecessarily long incision, but is almost certain to result in trouble, owing to haemorrhage from the numerous veins surrounding the upper part of the vagina. Proper apposi-

* The specimen was shown at the October meeting of the Branch.

tion of the edges of the uterine wound is much more difficult in this region, owing to the thinning of the uterine walls produced by the phenomenon known as "retraction." The whole operation is easier if the uterine incision can be kept high up, where the uterine muscle is thicker, though I can see no definite advantage in the transverse incision known as the *Fundusschnitt nach Fritsch*. Any one, too, who has had some experience of these cases will have noticed that the opening of the uterus is an easier proceeding when the membranes are intact.

Providing that one be lucky in avoiding the placenta, the uterine incision may be made slowly and deliberately with an extremely small loss of blood until the membranes bulge into the wound, when the amniotic cavity can be opened at leisure. The only disadvantage in cutting through the placenta is that one is obliged, in order to arrest the haemorrhage as soon as possible, to hasten the process of extraction of child and secundines, but it is scarcely worth while, as some have suggested, to try and work round the edge of the placenta instead of cutting through it. I can see little, if any, advantage in "eventration" before delivery of the child; a much longer abdominal incision is required, whereas, if the womb be left *in situ*, it is easy enough, by arranging a couple of large gauze swabs on either side between the uterus and the abdominal wall, to prevent the escaping liquor amnii and blood from entering the peritoneal cavity.

As soon as the placenta and membranes have been removed the uterus should be drawn right out and suturing begun. The manner of closing the uterine incision is of considerable importance. I personally prefer a not very coarse "chromicized" (Red Cross No. I) catgut, and for the first row I use "mattress" sutures, as they are less liable to cut out than single interrupted stitches, each stitch taking a wide grasp of muscle and just missing the uterine mucosa. The second layer is a continuous suture ensuring proper approximation of the serous coat. There should not be more than a quarter—or at the outside three-eighths—of an inch between any two sutures of the first row.

The history of the development of the modern conservative operation is of some interest, because for a very long time it was the universal custom not to stitch up the uterus at all, and the mortality arose principally from infection of the peritoneal cavity through the uterine wound, and without any understanding of asepsis it will easily be believed that any attempt to close the uterine wound probably made matters worse. Hence it is understandable what a different complexion was put upon the operation by Porro's suggestion (first carried out in 1876) of removing the uterus altogether. Now, it must be remembered that the modern operation of supravaginal amputation is *not* the original method of Porro. His operation consisted in drawing out the uterus, transfixing with the "pin," and applying the Koeberlé *serre-noeud*, after which the body of the uterus was cut off; the whole operation could, of course, be done very rapidly, and the mortality was enormously reduced by this method. I believe that even now there are not a few cases, especially among those operated upon late in labour, where the mother's life could be saved by Porro's method.

It is no doubt hard for us to realize what Porro did for Caesarean section. His operation at once precluded the possibility of subsequent peritoneal infection and of haemorrhage, besides possessing the advantage already mentioned of extreme rapidity. The objection has been raised that the operation is "unsurgical." This is nonsense; the most "surgical" procedure is that which, under any given circumstances, gives the best chance of saving the patient's life, and, as regards safety, Porro's original method is not easily beaten. At the time when, in 1777, young Sigault of Paris performed the first successful symphysiotomy, public opinion as regards Caesarean section was at so low an ebb that the operation almost fell into disuse, but it was Baudelocque chiefly who demonstrated the fallacy of supposing symphysiotomy to be so very much the safer operation. So things continued without much progress until relatively late on in the nineteenth century, when Porro (of Milan) introduced his operation; immediately prior to this the mortality was well over 50 per cent. It is difficult to get satisfactory statistics, but it is probable that Porro's method further reduced the mortality by about another 20 per cent. What we may call the final stage was reached when Sänger of Leipzig not very long afterwards proposed the adoption of proper suturing of the uterine wound, and Sänger's *conservative Kaiserschnitt* remains, with various modifications and improvements, the operation of to-day. With the advent of Sänger's operation conservatism justifiably reasserted its claims, and at present the universal practice is to trust to careful suture and leave the uterus intact; the question as to whether sterilization should be effected must of course be decided by a consideration of the merits of the individual case.

In only one of my own cases did union by primary intention fail, and this occurred in a patient from whom I removed an acutely inflamed appendix early in labour (primipara), Caesarean section being done simultaneously because it appeared the best course in the circumstances. The appendix infected the uterine wound and a large abscess had to be opened and drained; the patient ultimately made a good recovery though a slow one.

Since the above paper was written it has, by a curious coincidence, fallen to my lot to operate on a second case very similar to one of those already mentioned; it seems worth while, therefore, to place on record a brief note of the case.

CASE IV.

A woman, married twelve years. Had had eight children, the last two and a half years ago. Prior to her admission to hospital she had been in labour for twenty-four hours; the membranes had ruptured early and repeated vaginal examinations had been made by an unqualified midwife and subsequently by two medical men. On admission the head of the child could be made out lying high above the pelvic brim, the pelvic cavity being nearly filled by a large firm rounded mass, which the examining finger could not pass (a fortunate circumstance, in all probability, for the patient and myself); the pains were fairly strong.

It was obvious that in this case Caesarean section was the cause *ex necessitate*; the usual preparations were therefore made, and the operation proceeded with. The only difficulty in the first stage of the operation arose from the scantiness of liquor amnii, but the child was extracted in a fairly healthy condition, only to succumb ten days later to the effects of a severe burn of its back produced by contact with a damp hot-water bottle. Haemorrhage was easily controlled after eventration, and it was then seen that the fibroid was a solitary subserous one, growing from a point about level with the os internum outwards and backwards under the right broad ligament; the shelling-out process occupied some considerable time, but it was possible to leave a good cervical stump with abundant peritoneal covering, the operation being completed in the usual way. The right ureter had a somewhat extraordinary course, and the right uterine vessels were difficult to secure.

The patient was eventually discharged practically well, but had to remain in hospital for nearly two months on account partly of a troublesome phlebitis arising in old varices of both legs and partly of grave failure of compensation in an old rheumatic heart with rather well-marked mitral disease, the existence of which was discovered subsequently to the operation. The wound healed *per primam*, and gave no trouble. The uterus with the tumour weighed, after removal, about 9 lb.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, 1911, i, p. 189.

THE eleventh international conference on tuberculosis will be held this year at Berlin in October (22nd to 25th). All communications relative to the congress should be addressed to the General Secretariat, Berlinerstrasse, 137, Charlottenburg.

A PAPER by Surgeon Grow, of the United States Navy, published recently in *Ophthalmology*, deals with a subject which has already received the close attention of the British Admiralty—the vision necessary for the men who train and point large naval guns. The United States naval authorities insist that gun-layers shall possess a vision of 6/4.5 in the sighting eye, and 6/6 in the other. In other words, a gun-sighter must have normal vision, for 6/6 is subnormal, although conventionally accepted as normal. The author concludes that all candidates for the original rating of gun pointer or trainer should have a minimum vision of 6/4.5 in the sighting eye, and of 6/6 in the other eye. Hypopia of over 3.00 dioptres should be a cause for rejection. The medical officers should carefully re-examine the eyes of these men once a year, and if any deterioration be present the man should be examined by an ophthalmic surgeon. A slight reduction may be accepted in the case of successful gun-layers who have served a considerable time. In all cases the navy "unlearnable vision test cards" should be used.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF ASPIRIN POISONING.

At the present time aspirin is probably more frequently employed than any other medicinal substance. The frequency with which it has been given in moderate and large doses in varying painful conditions resulting from widely divergent etiological factors without untoward results has earned for it a reputation not only as an efficacious but also as a safe remedy. Only a few cases have been published in which its administration has been followed by toxic symptoms, and the writers until the present case had never seen any untoward symptoms from its use, although they have administered this drug to many hundreds of patients.

The patient was a painter aged 29 who, when in the Royal Mineral Water Hospital one day, complained of a slight cold, and at 7 p.m. was given 10 grains of aspirin. Just previously he had taken a glass of milk. An hour and a half later he felt a burning pain in his epigastrium, and his right eyelids began to swell. The swelling then quickly spread over the left eyelids, the face, lips, tongue, and pharynx. The roof of his mouth "felt dry," his speech became thick, and urticarial blotches appeared over his chest and arms. At the end of three hours from the time of taking the aspirin he could see out of the right eye only with difficulty. There was no dyspnoea. He experienced some discomfort from the swelling of the face and presented a very bloated appearance. Next morning, that is, fifteen hours after the administration of the drug, the only sign remaining consisted of some puffiness of the eyelids, which did not entirely disappear until the fourth day.

This case shows that alarming symptoms may follow moderate or even small doses of aspirin, and corresponds with those described by Barnett, Abercromby, and Brown. More severe symptoms, however, such as violent palpitations, feeble rapid pulse, dark green urine, and gradually approaching unconsciousness, have also been described. The onset in one of such cases occurred in only from fifteen to twenty minutes after administration.

The fact that the patient in our case had had a glass of milk previous to taking the aspirin may possibly have had some bearing on the case, because alkaline substances decompose aspirin with liberation of salicylic acid, which produces the toxic phenomena. At the same time, idiosyncrasy doubtless plays an important rôle.

We are of opinion that aspirin should be taken on an empty stomach, and unaccompanied by anything except water. It is said that one grain of powdered ergot, owing to its antagonistic action, will prevent symptoms of poisoning.

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Honorary Physician.
A. J. BRUCE LECKIE, M.D.,
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Royal Mineral Water Hospital, Bath.

A CASE OF FILARIASIS IN DEVONSHIRE.

In the middle of March a girl aged 19 years (a National Insurance patient) presented herself for treatment for a sore throat, and on recovery from this told me she had for six months or more suffered from a vaginal discharge, which had at one time nearly ceased, but had again become more profuse than ever. But for the sense of uncleanliness, the discomfort, and deep yellow stains on her linen, she would not have mentioned it, as it was occasioning no other symptom whatever.

On examination she was found to be a virgin, and no inflammatory signs were present in or around the parts. The urine was normal. I took a swab and made several slides of the discharge for examination, and ordered her injections and cinchona.

Under the microscope there were found pus cells, but no Gram-positive cocci or gonococci or rod forms in any quantity, but almost every field contained embryonic filaria.

The discharge apparently ceased under or during treatment. I therefore directed that it should be omitted for several days and again made a film, and found only what were apparently broken parts of filaria. At the same time (2.30 p.m.) I made a blood film from the finger, and found an increase of mononuclear and polynuclear leucocytes and eosinophiles, and also what was apparently an aggregation of several filaria, and also separate ones.

What, in my opinion, makes this case worth recording is the fact that the girl has never resided away from Devonshire or the adjoining southern counties, nor has she been in contact with any persons from countries where filariasis is common, and she is, moreover, seemingly in average health.

The microscopic examination of course removed a suspicion from the girl's mind and also from her parents' as to the nature of the "whites" as she called it, and at the same time revealed the unexpected to me and made me wish I had taken a swab of the throat.

It is also worth noting that a few days ago, in attending a recognized phthisical patient, struck by the little body-wasting in an otherwise typical and formerly haemorrhagic case, I made an examination of the sputum, and picking on a tiny nodule, found beside the acid-fast tubercle bacillus, the streptothrix or actinomycosis clump and very numerous loose mycelial spore-bearing tubes or threads.

This latter mixed infection is probably not rare, and I see has been reported in a paper by Dr. Frank Nicholson (BRITISH MEDICAL JOURNAL, February 12th, 1912) but regarding the filariasis I can find no mention of it as occurring in residents of this country.

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THE PRESENCE OF INTRACELLULAR AND FREE AMOEBOID PARASITES IN NOGUCHI'S CULTURES OF *SP. PALLIDA*.

In the BRITISH MEDICAL JOURNAL of December 14th last we described certain intracellular parasites found commonly in syphilitic lesions. These parasites were demonstrated by the jelly method of *in vitro* staining; and their development into spirochaetes was also described. They have now been found by us, and their presence has been confirmed by others, in every case of syphilis examined—in the primary and secondary lesions, in the circulating blood of syphilitics, and in some tertiary manifestations. In addition to these intracellular parasites, free amoeboid developmental forms were mentioned as occurring in chancres, glands, and sores. Analogous parasites found in certain animals suffering from allied affections were also noted (in rabbits, hares, guinea-pigs, earthworms). Lastly, these parasites were given the generic name of Lymphocytozoa, all species of which possess a spirochaete-like phase, the spirochaetes being the gametes.

As soon as Noguchi's cultures of the *Spirochaeta pallida* could be obtained a search was made in them for the parasites described. The medium employed by Noguchi consists of a mixture of agar and ascitic fluid in which are suspended small masses of rabbit tissue cells, and the spirochaetes grow anaërobically. After the sixth day of incubation, in the tissue cells (in those cultures which show the spirochaetes) what appear to be intracellular parasites have been found, and these seem to be indistinguishable from those seen by us in chancres, glands, sores, and blood of syphilitics. Moreover, the same free amoeboid forms, as described by us in the paper mentioned, have been found in the cultures. The cultures under observation were subcultures taken from those obtained from the Rockefeller Institute, New York.

The method of demonstrating these intracellular and extracellular parasites in the cultures is as follows: A subculture is chosen which contains spirochaetes. A long sterile pipette, with its upper end sealed, is thrust down through the layer of paraffin used to keep the medium anaërobic, through the semi-solid mixture of agar and ascitic fluid, into the mass of tissue cells at the bottom of the tube. The sealed end of the tube is then cut off, and some of the cells, some parasites, and perhaps some spirochaetes, enter the lower end. The upper end of the pipette is then sealed again, and it is withdrawn. Finally, some of its contents are shaken out on to a cover-slip, and this is inverted on to a ready-prepared jelly when the cells and parasites are stained by the jelly method. In old cultures, where there is considerable destruction of tissue, the parasites appear to undergo development outside the cells. The parasites in the cultures seem to be morpho-

logically similar to those described in the BRITISH MEDICAL JOURNAL of December 14th, 1912, and pictured therein.

EDWARD HALFORD ROSS,
E. JENNINGS, Lieut.-Colonel, I.M.S.
(From the laboratories of the John Howard McFadden Researches.)

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

LEEDS GENERAL INFIRMARY.

A CASE OF PUERPERAL ECLAMPSIA TREATED BY CAESAREAN SECTION.

(By JOHN B. HELLIER, M.D., Honorary Obstetric Physician to the Infirmary; Professor of Obstetrics in the University of Leeds.)

THE patient in the following case, an unmarried girl aged 18, was admitted on February 24th, 1913, in the eighth month of pregnancy. She had had good health before pregnancy, but since conception had suffered from vomiting all the time, and in the later weeks from headache and from oedema of feet, and of the eyes and face in the mornings. On the day of her admission she had had convulsions, and had bitten her tongue.

State on Admission.—She was very ill indeed, with a temperature of 101°, pulse 156, respirations 48. She was profoundly comatose, and there was a very large amount of albumen in the urine. Labour had not begun. The prognosis was considered rather bad.

Treatment.—It was decided to evacuate the uterus by abdominal Caesarean section, and, chloroform having been administered, this simple and easy operation was performed without any difficulty or complication. The child could not be got to breathe, being poisoned by the toxaemia.

Progress.—The patient had seven fits after the operation, and received saline injection and hypodermics of morphine and atropine. At 2 a.m. of the night following the operation the temperature was 104.8°. The fits ceased at 4.30 a.m.

February 25th. She improved during the day, and showed some return of consciousness by evening, but passed no water.

February 26th. She was much better, and passing urine freely, with less albumen. The temperature was normal.

On February 27th she was quite conscious, and on February 28th passed 76 oz. of urine.

On March 2nd she was again very much better, and was reading a paper.

Result.—On April 9th she was sent to the Convalescent Home, and inspected again by me at the infirmary on April 16th. She was very much better; all oedema had gone, but some albuminuria remained.

REMARKS.—Eclampsia occurs only in connexion with pregnancy, and the emptying of the uterus stops the formation of the toxins, although time is needed to eliminate what is already in the system. Abdominal Caesarean section is the quickest way of emptying the uterus when labour has not begun and it causes wonderfully little shock, and all trauma of the cervix and vagina is avoided; this is no small matter in an eclamptic primipara.

I do not advocate this operation as a routine treatment, but it seemed quite a good plan to adopt in this case, for the patient was little more than a girl, the symptoms were urgent, labour had not begun, and was not due for a month, and the parturient canal was not infected; moreover, she was in a clinic with all appliances handy for the operation, and where much experience has been acquired in the rapid and successful performance of Caesarean section. Such an operation also offered the best chance for the child. I did not desire to try the vaginal section. I have recently seen it performed on the Continent in a very similar case, and was much struck with the serious amount of trauma involved. Owing to the great force required for delivery I am sure the trauma was many times more severe than if the abdominal route had been adopted.

* THE next congress of French-speaking paediatrists will take place in Paris on October 3rd and 4th, under the presidency of M. Netter. The subjects proposed for discussion are obesity in children and cerebral tumours.

Reports of Societies.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

AT the first meeting of this society under its revised constitution, which was held on April 24th and 25th, Mr. J. B. LAWFORD, President, in the chair, Mr. FRANK JULER described a case of *Acute purulent keratitis in exophthalmic goitre*, which he had treated by repeated tarsorrhaphy. Mr. ORMOND recorded two cases of permanent hemianopia following migraine, the patients being young and apparently healthy persons, and he referred to three similar cases recorded by Dr. Thomas of Boston. Both Mr. Ormond's cases had suffered from sick headaches for years, with very severe migraine, followed by hemianopia. Observations had been made in other patients temporarily blinded by attacks of migraine, in which a spasmodic condition of the retinal arteries had been seen with the ophthalmoscope. The probable cause of the blindness in these two cases was a spasm of that branch of the middle cerebral artery supplying the visual centre, resulting in a permanent interference with the visual function of that side, and so leading to blindness on the opposite side. Dr. JAMES TAYLOR and Dr. GORDON HOLMES described two families showing a similar defect in vision, and emphasized the following: (1) The coexistence of family optic atrophy with tabes, yet the absence of any apparent effect of the tabes on the optic nerve in the cases affected. (2) The transmission of the optic atrophy in the female line. (3) The occurrence of migraine in several of the patients affected, and its persistence even after practical blindness had been reached. (4) The occurrence of other eye defects in members of the family. Mr. ANGUS MACNAB read a paper on an operation for the *Excision of the conjunctival sac and lid margins*, which he described in detail. He had been impressed by the relief given to the patients who had discharging sockets by this operation, and had no hesitation in recommending it to those persons with an empty socket covered with a shade, especially as the appearance was greatly improved by the procedure. Mr. N. BISHOP HARMAN supplied an analysis of 300 cases of high myopia in children, with a scheme for the *Grading of fundus changes in myopia*. These cases were collected during educational work in London, and all belonged to the elementary schools, so were socially of the working classes. All had come under observation in connexion with the new schools for myopes; many had been watched for several years; out of the 300, boys were 46 per cent., girls 52 per cent., a difference of 8 per cent., which agreed with the difference in the sexes in ordinary vision tests. The bulk of the cases seen were aged 8 to 12 years. Dealing with fundus conditions, the speaker criticized adversely their present nomenclature for changes about the disc. He proposed that the fundus should be spoken of as first, second, or third degrees, according as the atrophy at the disc was as wide as one-half the disc diameter, the whole diameter, or greater than that. To this would be added other details about the macula, etc. He showed a chart giving the correlation of refraction and fundus change according to this plan; it bore out his contention. He maintained some definite notation was necessary when these cases came under observation for a definite object such as the regulation of education. The next communication, by Mr. TREACHER COLLINS and Mr. HUDSON, dealt with the pathological examination of an eye with *Congenital anterior staphyloma*. Mr. TREACHER COLLINS followed with a paper dealing with *Fibrous tissue formation* in connexion with the fibro-vascular sheath and visible vessels on the surface of the iris. Mr. E. ARTHUR DORRELL, speaking of *Tobacco amblyopia*, said the dilatation of the pupil obtained when the skin of any part of the body was stimulated was either in abeyance or obtained only by increased stimuli in the condition. His 100 cases were divided into three classes: Class A, ordinary unselected cases, showing no signs of nervous disease and not suspected of tobacco poisoning; Class B, cases suspected of tobacco poisoning and showing no signs of nervous disease; Class C, cases showing signs

of nervous disease. In Class A 58 eyes were examined, with the result that in 89 per cent. only five to seven cells were required to produce the reflex. In Class B 121 eyes were examined and in only 20 per cent. was dilatation obtained with five to seven cells, and in over 50 per cent. of the remaining 80 per cent. no dilatation was obtained at all, with the strongest stimulus the patient could stand. In Class C 18 eyes were examined and in only 22 per cent. was the reflex obtained with five to seven cells, and over 75 per cent. of the remainder gave no dilatation. Owing to the similarity in the results in Classes B and C this test was not a positive sign in favour of tobacco poisoning alone, but should be included in the symptom complex of locomotor ataxia and allied affections of the spinal cord.

Retinal Changes Associated with Systemic Disease.

Dr. JAMES TAYLOR, in opening a discussion on vascular and other retinal changes in association with general disease, said he proposed to direct particular attention to thrombosis or embolism of retinal vessels, and to raise some points in reference to other conditions embraced in the title of the discussion. He asked first as to the prognosis in albuminuric cases, and referred to the short duration of certain cases and the length of life in others. He referred also to diabetic cases, and mentioned a case in which the condition had existed during eight years, the patient being still alive. The condition of "silver wire" arteries, described by Marcus Gunn, was also alluded to, and a case, seen by Gunn and diagnosed by him, was mentioned as being still alive after nine years. Dr. Taylor then referred to 4 cases with the ophthalmoscopic appearance of embolism of the central artery of the retina. In 2 of these heart changes were present; in 2 no such changes existed, and there was no albuminuria. Reference was made to the frequent occurrence of the characteristic ophthalmoscopic appearance of embolism of the central artery in which no heart disease could be discovered. Such were probably thrombotic. Eight cases of venous thrombosis were then described. In 7 albuminuria with a hypertrophied heart was present; in several both conditions. One was alive and in fair health after two years. A brief reference was made to retinal haemorrhage resulting from syphilitic disease—not a very common condition. He concluded by expressing the opinion, gained from the experience which his colleagues at Moorfields had afforded him, that in most cases of venous thrombosis cardiac hypertrophy and vascular disease with or without albuminuria might be present. In his experience, venous thrombosis was not very common in glycosuric cases. The prognosis in such cases was bad, yet exceptionally the duration of life after venous thrombosis was much longer than one would naturally expect. Mr. L. WERNER (Dublin) dealt with the subject of angio-sclerosis chiefly from the chemical and ophthalmoscopic points of view. The ophthalmoscopic evidences of the disease were first considered and discussed. The necessity of an ophthalmoscopic examination in cases of suspected angio-sclerosis in general practice was emphasized, and some cases were related illustrating several points of interest. Obstruction of the retinal circulation was next treated of in connexion with two cases, illustrative of different types of disease. In conclusion, the interesting subject of sudden temporary obscurations of sight was referred to, the ophthalmoscopic appearances observed during the attacks were summed up, and the cause discussed, including the theory of arterial spasm. Mr. GEORGE COATS described first the normal structure of the central artery and vein, and pointed out the changes which took place in disease. In the retinal vessels the commonest form of disease, at least in cases of obstruction of the central vein, was a thickening of the fibrous tissue of the wall fibrosis. It was not improbable that endothelial proliferation occurred in response to the stimulus of a circulating toxin. Mr. Coats also demonstrated the pathological features of some cases of obstruction of the central vein, and showed that in early stages a homogeneous thrombus might be found, which subsequently underwent invasion and organization from the surrounding connective tissues, or sometimes from the endothelium. Two cases were also demonstrated which proved that some cases of arterial obstruction were not due to endarteritis and thrombosis, but that the condition might be caused by embolism.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

AT a meeting on May 7th, Sir ANDERSON CRITCHETT, President, in the chair, the following were among the exhibits:—Mr. N. BISHOP HARMAN: (1) A case of *Exenteration of the orbit*, with partial excision of the maxilla and ethmoid for rodent ulcer. The woman had first seen the rodent seventeen years ago, and she treated it herself with caustics. It frequently recurred, and nine years later was as large as a farthing. She then had *x* rays at every recurrence for four years. Next, zinc ions were used, followed by radium for nine months. When sent to Mr. Bishop Harman for operation the ulcer was as large as a penny, and was fixed to the bone. Ultimately an extensive operation had to be performed, for the growth was found to have extended into the orbit and the bony walls. In reference to the case the exhibitor said that none of the newer measures for the treatment of rodent ulcer could compare with the knife for certainty and security, and the knife was infinitely less costly than any other method. Had this growth been excised in the first instance, the woman would have escaped the necessity for this severe operation, and would have preserved to herself two sound eyes. (2) Drawings of a case of extreme *Hyperphoria*, for which he had operated by his new method of subconjunctival reefing. The patient, a woman aged 28, had been a martyr to severe headaches since school days, and could obtain no relief from them. Examination of the eyes revealed hyperphoria, or latent vertical squint, requiring a 15° prism to correct. It was impracticable to wear such a high degree prism. Concluding from other signs in the case that the left superior rectus was at fault he operated, shortening that tendon by his new method. She had now orthophoria to every test, and the headaches had completely ceased. Seven months had elapsed since the operation, and the result was perfect in every way. Mr. EDGAR CHATTERTON: A case of *Tuberculous iritis* in both eyes. The boy noticed that his sight was bad when at school thirteen months ago. He had never had pain, and there was no history of tubercle or syphilis. Two months ago he had yellow vascular nodules in both irides at the angle of the anterior chamber, posterior synechiae, keratitis punctata, and vitreous opacities. He was now having tuberculin injections, $\frac{1}{1000}$ mg. once a week, and frequent tappings of the aqueous. The condition had improved on that treatment. Mr. SYDNEY STEPHENSON: A case of *Ocular torticollis* in a boy aged 13¼. At 3 months of age, when recovering from whooping-cough, he held his head towards the left shoulder, and that habit had persisted. While he was in the wry-neck posture there was no squint nor diplopia. But when he straightened his head the right eye turned upwards and outwards, and vertical and contortional diplopia developed. Mr. G. H. POOLEY and Mr. HAROLD GRIMSDALE: Some cases of *Angioma of retina*. Mr. POOLEY: A case of *Giant-celled sarcoma* in which there had been several operations for recurrences, the last in November, 1911, since which there had been no further appearance of the disease. The PRESIDENT commented on the present procedures as a great advance on the days of removal followed by the application of caustic zinc paste to the remaining surface of the wound. Mr. H. HERBERT: A case of *Third nerve paralysis* with rhythmic clonic spasm. No divergence was to be seen, but there was the same absence of strabismus as in congenital paralysis of the sixth nerve. The synchronous raising of the lid to the normal extent was due to spasm of the unstriped levator muscle, which was innervated by the sympathetic. Mr. H. J. FISHER: A case showing arterio-venous communication in the cavernous sinus successfully treated by *Ligature of the common carotid*. Mr. ELMORE BREWERTON, discussing the case, pointed out the reason why the internal carotid should be tied in preference to the common carotid, and said he thought that measure would be followed by more cures and less cerebral complications. Mr. ERNEST CLARKE: A case showing an unusual arrangement of *Opaque nerve fibres*. The patient was a myopic youth aged 20. There was a peculiar ring round the disc, bulging forward, giving to the disc a crater-like appearance. Opaque nerve fibres spread from all parts and partly involved the macula. Mr. R. CRUISE: Three instances of *Sclerotic trephining*, combined with insertion

of thread in glaucoma, the object being to increase the area after trephining. The aqueous filtered along the course of the thread and did not cause inconvenience. He explained that the procedure was on its trial. The PRESIDENT said one of the cases shown he sent to Mr. Cruise for treatment, expecting that enucleation would have to be performed, but from a tension of T + 3 the tension was now found to be normal or even subnormal, and the pain had gone. Mr. RICHARDSON CROSS (Bristol): *A Pigmented growth of the conjunctiva.* The general impression was that free excision followed by the galvano-cautery to the residue should be done.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

AT a meeting on May 1st, Dr. AMAND ROUTH, President, in the chair, Dr. NAPIER BURNETT (Newcastle-on-Tyne) recorded a case of *Bacterial infection of the fetal membranes* in a primigravida, aged 28, who had an abortion in the twenty-third week. Pregnancy had run a normal course until sixteen days previously, when a discharge of watery fluid occurred, which was followed in two days by a more copious discharge; this continued intermittently, and the fetal movements were still felt by the patient. During the miscarriage there was practically no liquor amnii, and the afterbirth was discharged spontaneously. On examination of the membranes a thickened yellowish patch about the size of the palm of the hand was noticed, situated upon the pole opposite to the placenta. The puerperium was complicated by an attack of appendicitis, but in other respects was normal; the appendix was removed four weeks later and found to contain about 2 drachms of purulent fluid. The thickened patch of fetal membrane was examined by Professor Stuart Macdonald. He found the thickening affected chiefly the chorion, which presented nodular bulgings on its decidual aspect; the amnion was only slightly affected. The thickened parts showed leucocytic infiltration and extensive areas of necrosis; in the latter were found isolated areas closely resembling miliary abscesses in appearance. These parts also showed extensive bacterial invasion, but, as the membranes had been hardened in preservative fluid, no cultures of these organisms could be made, and consequently their identification was impracticable. The author believed that the fluid discharged was liquor amnii, and further expressed the opinion that the bacteria had probably been lying dormant in the vagina during pregnancy; no vaginal examination had been made previous to the miscarriage. Dr. RUSSELL ANDREWES described a case of *Rupture of the uterus* in a multipara admitted to the London Hospital twenty-four hours after labour. She had been attended by a doctor who reported that he had had great difficulty in delivering with forceps, and then directly after delivery a pendulous mass came down through the vulva. The patient was extremely ill; the swollen, torn cervix protruded through the vulva, and examination under anaesthesia showed the following lesions: (1) Incomplete rupture of the perineum with much bruising; (2) vagina completely separated from cervix except for about three inches in front and to the right side; (3) lower uterine segment and cervix separated from the upper uterine segment except on the right side and in front; (4) lower segment and cervix torn through from top to bottom on the left side. There was a large quantity of blood in the peritoneal cavity. Vaginal hysterectomy was at once performed. There was some pyrexia for four and a half weeks after the operation, but ultimately the patient made a good recovery. The author believed the injury had been caused by one blade of the forceps having been applied outside the uterus, and that the cervix and lower uterine segments had been pulled away with the head by main force.

SECTION OF LARYNGOLOGY.

AT a meeting on May 2nd, Mr. HERBERT TILLEY, President, in the Chair, Dr. DE HAVILLAND HALL, in introducing a discussion on the etiology of unilateral *Paralysis of the recurrent laryngeal nerve*, drew the following conclusions: (1) Aneurysm of the aortic arch is the most common cause of recurrent paralysis, and may be the only symptom for a year. (2) The left recurrent nerve is almost exclusively affected in aortic aneurysm; the transverse and descending arch constitute the particular site. (3) The occurrence of valvular disease is a cause of recurrent paralysis. (4) When the paralysis is due to pressure it is almost always left-sided, which is four times more frequent than right unilateral paralysis. (5) In malignant disease of the oesophagus the recurrent nerves are almost equally affected. (6) Right recurrent paralysis and dysphagia are almost always due to malignant disease of the oesophagus; left recurrent paralysis and dysphagia are usually due to this disease. (7) If recurrent paralysis be due to central causes the nerves are affected nearly equally. Sir DAVID FERRIER contended that the Semon-Rosenbach law should be regarded as an illustration of his view that in all motor nerve trunks the nerve fibres of extensive muscles were more vulnerable. Paralysis of the recurrent laryngeal nerve was either (1) complete, in which case the cord was relaxed and assumed a cadaveric position, or (2) incomplete (more common), when the posterior crico-arytenoid muscle was more affected than the adductors. The toxins of beri-beri and lead picked out the extensors, as did also the pressure of the fetal head in the case of the anterior crural nerve. Injections into the sciatic nerve had a selective effect, and after death the extensor nerves lost their power first. In tabes there was probably a neuritis of the vagus trunk, and the recurrent was affected in this selective fashion and led to abductor paralysis. The nucleus ambiguus, or motor nucleus of the tenth nerve, was closely related to other nuclei. In only two tabetic cases had central changes been proved, and in one of these other nuclei were involved with no resulting symptoms. The nucleus ambiguus supplies three nerve branches: (*a*) Upper, supplying the crico-thyroid and oesophagus; (*b*) middle, distributed to the palate; (*c*) lower, which supplies the recurrent laryngeal and inhibitory fibres to the heart. In bulbar disease and muscular atrophy no selective abductor action could be recognized. Dr. PERMEWAN stated that cases due to aneurysm were not so frequently published as those due to the rarer causes, hence the preponderance of these cases in the records. Of Avellis's cases, published in 1891, in nearly one-half the cause was not ascertained. Taking the record of the last ten years, and classifying according to Sir StClair Thomson's scheme, he had collected 360 cases. The greater accuracy had resulted from (1) the use of *x* rays, (2) the recognition of paralysis of the cord in chronic bulbar lesions, (3) the assignment of toxic causation, (4) the discovery of the association of paralysis with forms of cardiac enlargement. In the aneurysm cases two-thirds were confirmed by an *x*-ray examination. Mitral stenosis resulted in an expanded left auricle which stretched rather than pressed on the recurrent laryngeal. From the point of view of prognosis, the frequency of recovery in the neuritic group was of great importance. Sir FELIX SEMON considered that his law held good both for nuclear as well as nerve affections. The abductor action of the cords could not be described as analogous to extension of the limbs. The respiratory movement of the cords was bulbar in origin, while phonation was voluntary and cortical. There was no antagonistic action between the abduction of respiration and the adduction of phonation. Organic disease affected the abductors and functional disease disordered adduction; to this there was no analogue in limb paralysis. Probably the nucleus ambiguus and the recurrent nerve were affected on different occasions in a manner analogous to oculo-motor paralysis, which might be either cortical, nuclear, or peripheral. Possibly bulbar paralyses as described were really due to pseudo-bulbar paralysis; it was essential to rely only on clinical cases where a *post-mortem* examination was recorded. Dr. P. WATSON-WILLIAMS supported the view that the nucleus was affected in tabes, and instanced the association of palatal paralysis with abductor paralysis. In tabes interference with the inhibitory fibres of the vagus was the explanation of the high pulse frequency so often observed. Mr. E. D. DAVIS alluded to the rarity of abductor paralysis in tuberculous disease of the right pleura. Dr. DUNDAS GRANT mentioned the difficulties of mediastinal skiagraphy. Mr. T. GUTHRIE described certain definite cases of abductor paralysis where the patient recovered. The PRESIDENT described 3 cases of unilateral abductor paralysis in whom he had observed complete recovery; influenza played an important part in the causation of the neuritis. The prognosis was very different in the aneurysmal cases.

SECTION OF OTOLOGY.

AT a meeting on May 16th, Dr. DUNDAS GRANT, President, in the chair, the following were among the exhibits:—Dr. DONELAN: A case of persistent paroxysmal cough, apparently due to *Irritation of the chorda tympani nerve.* The patient, a man aged 45, was seized, a few days after visiting some engineering works, with a violent fit of coughing. Coughing fits persisted for the ensuing two years without ascertainable cause. Except for general laryngeal hyperaemia, probably due to the coughing, the larynx appeared normal, and various medical examinations failed to assign a cause. On examining the ears, there was found on the left tympanum a tiny black spot surrounded by a reddish areola, just behind the malleus where the chorda tympani nerve crossed it. Under cocaine a small spicule of steel 3 mm. long was extracted; this was followed by violent coughing, but there had been no further trouble. Mr. JOHN F. O'MALLEY: A girl, aged 10, a congenital syphilitic, whose *Bilateral deafness* of one year's duration was cured by neo-salvarsan, three doses of 0.3 gram intravenously having been administered over a period of three months. The PRESIDENT: (1) A case of *Chronic attic suppuration* treated by an operation, which enabled the ossicles and the remains of the membrane to be retained. The patient, aged 23, had had discharge from the left ear about ten years, and it was found to issue from the attic. Hearing was very good. The operation shut off the diseased cavity from the Eustachian tube and naso-pharynx, and healing ensued quickly. Removal of ossicles and membrane would have left the cavity of disease in communition with the pharynx, and rendered it liable to continuous reinfection. (2) A case of chronic *Suppuration of the middle ear* which had proved rebellious to transmeatal treatment until that was supplemented by tubal injections of chloride of zinc. The patient, a girl aged 20, had had discharge from the right ear since childhood. The lower part of the tympanic membrane was absent. The injection of a few drops of a 1 per cent. solution of chloride of zinc up the Eustachian tube through the Eustachian catheter, followed by a few drops of paroleine to drive the chloride of zinc into the tympanum, led to speedy improvement, and there was now no sign of pus.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

AT a meeting on April 4th, Dr. J. O'CARROLL, President, in the chair, Dr. J. B. COLEMAN, in a paper criticizing the *Iodoform and benzoyl chloride treatment of pulmonary tuberculosis*, said that in the year 1911 the advocate of this treatment practised intramuscular injection of iodoform and benzoyl chloride dissolved in ether and liquid paraffin, the use of benzoyl chloride being suggested on the assumption of its proved efficacy in leprosy—an assumption which more recent investigation at the Mahaica Leper Asylum in British Guiana proved to be erroneous. In the same year the treatment was carried out in Steevens's Hospital, Dublin, and abandoned after 4 out of 7 cases so treated had died. Later on the exploiter of the treatment, in a paper read before the Academy (see BRITISH MEDICAL JOURNAL, vol. i, 1913, page 21), reverted to the method, introduced by Dewar in 1903, of intravenous injections of half-grain doses of iodoform dissolved in ether and liquid paraffin (followed by tuberculin and vaccines). He contented himself with accepting Dewar's conclusions, and he made no attempt to justify the administration of iodoform on scientific grounds. His narration of 6 cases of pulmonary tuberculosis, in which successful results were claimed for the treatment, was of no scientific value as it was not a complete enumeration of all the cases in which the treatment was tried by him. Amongst the objections to iodoform was the fact that the drug was weak, not fatal to bacteria, and not monotropic for the tubercle bacillus, in the sense in which this term was used in connexion with the specific chemotherapy of Ehrlich. On the other hand, it was toxic to human beings. In pulmonary tuberculosis the intravenous injection of iodoform was attended with special dangers, as the injection was liable to be followed by severe attacks of coughing, and thereby entailed the risk of haemoptysis or of pneumothorax. Sir Almroth Wright, in a report dated October, 1912, in reference to an inquiry into the treatment of pneumonia by ethylhydrocupreinhydrochlorate, considered the conditions which ought to be satisfied before any drug treatment could be applied with a view to killing the causal agents of disease in the infected body. He discussed the relation in which the specific pharmacotherapy of Ehrlich stands to the prescribing of antiseptics, and pointed out that "it never entered into the conception of the physician who prescribed antiseptics to require of these that they should be monotropic for the causal agents of disease, nor did he appreciate that the effective dose of a therapeutic agent was capable of being determined by blood tests." He pointed out that the medical profession regarded it as "an indefensible proceeding to administer a drug concerning which we have neither *a priori* grounds for believing that it will, nor evidence to show that it does, do what is intended. And we condemn not only treatment which is based upon notoriously erroneous assumptions, but also treatment which is simple random experimentation." *Mutatis mutandis*, the rules laid down by Sir Almroth Wright, in investigating the effect of ethylhydrocupreinhydrochlorate in pneumonia, applied to an inquiry on similar lines in reference to the use of iodoform in pulmonary tuberculosis. Dr. WALTER SMITH said that when called upon to judge of the success or otherwise of any method of treating disease there were two postulates—(1) an adequate knowledge of the drugs or methods used; (2) sufficient clinical and scientific evidence of their fitness. There might be a third, but doubtful, method—namely, the method of analogy. In regard to the second postulate, the paper in which the treatment now criticized was advocated had not produced satisfactory evidence. Enough was known about iodoform to justify scepticism as to a half-grain dose introduced into the body of a man exercising any influence. Even *in vitro* it was harmless to the *B. tuberculosis*. As for benzoyl chloride, he could not understand how so irritating a compound could be tolerated by the human organism. Dr. CROFTON, the reader of the paper criticized, said that, owing to the extraordinary *a priori* objections to the use of intravenous injections of iodoform in ether he had tried to get something as good to be given intramuscularly, and had, therefore, tried iodoform and benzoyl chloride, and if he had not succeeded in the advanced cases referred to, he considered that he had not hurried their end, and since some cases had much improved, he held that he was therefore justified in trying the treatment. As to the assumption that iodoform would do no good, he showed that rabbits had been injected with the bovine bacillus, and when the disease had developed had been completely cured with iodoform in ether given intravenously. This, he considered, gave good grounds for its use in human cases. Could it be shown that fresh air or sanatorium treatment had ever cured such infected rabbits? Iodoform with the molecule intact he admitted was a weak germicide, but in the presence of pus it was split up with the liberation of free iodine, and he suggested that it acted as an inactivator of the toxin of the tubercle bacilli. He had never met with pneumothorax in any of his cases, nor had he ever heard of such an accident. He concluded by giving a summary of 29 private cases in which the treatment had been carried out: 6 early cases, apparently cured; 8 second stage cases, apparently cured; 15 advanced cases, 6 apparently well, 2 very much improved, 7 died. Dr. PARSONS said that it did not take very long after the introduction of a treatment which was successful for that treatment to become general, and pointed to salvarsan as a notable instance of this recently; but this had not been the case in regard to the iodoform treatment suggested by Dewar. Sir JOHN MOORE discussed the dangers attending this form of treatment. Dr. T. GILLMAN MOORHEAD said that he did not think that any member should be allowed to remain under the impression that the Academy disapproved of the trial of any method of treatment unless that method was dangerous; he did not consider this method dangerous, and he saw no objection to its trial. What should be deprecated was bringing a method of treatment before the public before the profession was satisfied that it should be brought forward. All desired to arrive at the truth of the matter, and he therefore suggested that it might be well if a certain number of cases could be submitted to independent examination, and then treated and compared with

some other cases which had not been treated, and that the results might then be reported to the Academy. Dr. KIRKPATRICK said that several of the cases in which the treatment was employed were under his care. The patients had been in hospital for some time under satisfactory conditions, the majority of them being treated in the open air on the balcony, where they were in as good circumstances as in a sanatorium. He could say that in no case did the treatment seem to do them any harm, nor did the patients object to the treatment. Dr. BEWLEY endorsed what Dr. Moorhead had said. He had tried the treatment, but had not yet arrived at any conclusions; he looked forward to bringing his results before the Academy. The PRESIDENT said he considered that Dr. Moorhead's suggestion would get over all the difficulties. He suggested that the profession should, as far as possible, keep clear of doing away with healthy scepticism.

ULSTER MEDICAL SOCIETY.

AT a meeting on May 8th, Dr. R. W. LESLIE, President, in the chair, Mr. A. FULLERTON read a paper on 48 cases of *Nephrectomy*, with four deaths. He laid stress upon the necessity of using the ureteral catheter, and demonstrated the accuracy of diagnosis attainable by its use. Mr. HICKS, in a paper on *Caesarean section for eclampsia*, enumerated three successive cases of eclampsia; in one no operation was allowed, and the patient died; in another operation was not performed till the second or third day, and the patient died; in a third, section was done twelve hours after the first symptom of the eclampsia, and the patient made an uninterrupted recovery.

HARVEIAN SOCIETY OF LONDON.

AT a meeting on May 8th, Dr. LEONARD GUTHRIE in the chair, the following were among the exhibits:—Mr. LAMING EVANS: A case of *Congenital dislocation of the hip*, in which he had replaced the head of the bone two years previously, and complete functional use of the limb had been recovered. Dr. HAY: A case of *Friedreich's ataxia* in a boy; another member of the family had no knee-jerks. Dr. PATTERSON: A case of *Bronchiectasis* in a child aged 5, the symptoms having been present for at least two years. Dr. TORRENS: A boy suffering from *Splenomegalia*. Dr. WILLCOX: (1) A woman who had had a temperature for about a year, with signs of endocarditis; no treatment proved of any avail until a virulent *Rheumatic vaccine* had been injected. (2) A man with *Fibrosis of the left lung;* some fluid had been found by means of the *x* ray, although the physical signs all pointed to the complete absence of fluid. Dr. TURTLE: A case in which there had been marked *Separation of the lower epiphysis of the humerus*, followed by complete recovery. Dr. FITZWILLIAMS: A case with a swelling at the root of the neck, the diagnosis lying between a hernia of the lung, a lymphangioma, and a blood cyst. Opinion was fairly evenly divided between the first two.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting on May 6th, Dr. CONSTANCE LONG, President, in the chair, Dr. FLORENCE WILLEY, in a paper on *Menstruation*, raised the following questions: (1) What is normal menstruation? (2) In women whose type of menstruation has undergone any change, what conditions are found of an abnormal character which may reasonably be supposed to account for that change? If physiological menstruation rendered the majority of women invalids for a day or two each month, then all women workers, she said, ought to have the necessary leave of absence. But if menstruation were normally a physiological function, performed without pain or distress in healthy women, it were well that this should be generally recognized. The speaker had investigated 500 consecutive cases. Among the conditions found in hospital patients attending the gynaecological out-patient department were the following: Age of onset between 12 and 17 years in 86 per cent., at 14 or 15 years in 44 per cent.; menstruation regular in 84.7 per cent.; recurring every twenty-eight days in 80.9 per cent.; loss moderate in 72.5 per cent., scanty in 15.1 per cent., profuse in 12.4 per cent.; in 73.7 per cent. menstruation was painless, in 5.6 per cent. it caused slight pain, and in 20.7 per cent. it was definitely painful. In 68 per cent. the period lasted four to seven days, in 18 per cent. less than four days, in 14 per cent. more than seven days. These cases, though representing a series of women complaining of some gynaecological ailment, showed that in over 75 per cent. the women had begun to menstruate at the age of 13 to 16, the period recurred regularly every twenty-eight days, the amount of blood lost was moderate, and the whole function was performed painlessly. Statistics obtained from a series of private patients agreed closely with those quoted, except that less than half (45 per cent.) menstruated painlessly, whereas more than three-quarters of the working women experienced no pain. With regard to pathological conditions found among those patients whose menstrual habit had undergone some change, the speaker, after stating that a very large proportion of gynaecological patients showed no menstrual change at all, claimed that the most important conditions influencing menstruation were marriage, retroposition of the uterus, pelvic inflammation, and constipation. Metrorrhagia almost invariably indicated one of four conditions—malignant disease, polypi, haemorrhages associated with pregnancy, inflammation of the appendages. The influence of marriage on the menstrual periods generally appeared to be entirely beneficial. The conclusions she drew from her investigations were: (1) That normal menstruation was not an incapacitating experience either from the amount of blood lost or from the association of pain; (2) that it was an experience to which normal healthy women paid no more attention than they did to other physiological functions, such as defaecation or micturition, which also were normally performed painlessly, but might become acutely painful under pathological conditions; (3) irregularity, pain, excessive loss, and incapacitating malaise during menstruation were due to pathological conditions requiring treatment. Painful menstruation was due either to some abnormal condition of the muscle of the uterine wall or to some failure of that polarity of the uterus by which dilatation of the cervix tended to make contraction of the body less painful and more effective. Dysmenorrhoea was most commonly found in girls leading sedentary lives, who suffered from constipation and anaemia. Outdoor exercises or gymnastics were often effectual in curing dysmenorrhoea with excessive loss. She advocated much outdoor exercise for girls during school life, excluding, however, violent exercise at the time of the periods. In the discussion which followed, Dr. CONSTANCE LONG advocated the playing of games but not of matches during school life, and said that bicycling was specially useful in relieving the pelvic circulation. She attached no importance to the occurrence of amenorrhoea apart from a definite pathological condition, as it practically always righted itself. Dr. ALICE CORTHORN had conducted inquiries among 1,000 school girls and had found that only 5 per cent. suffered from dysmenorrhoea. Dr. EMILY FLEMMING and Dr. DOROTHEA COLMAN disapproved of excessive exercise for school girls during the menstrual periods but considered moderate exercise to be permissible. Other members having joined in the discussion, Dr. WILLEY replied.

THE estate of the late Dr. George Bruce McDonald, of Shepperton, has been sworn at £17,021.

IN a paper in the *Quarterly Journal of Experimental Physiology* Lyda May Degener reports the results of experiments to test the statement of Simpson and Hunter that (in sheep) thyroidectomy was followed by some increase in the weight of the pituitary body; the increase was much less than had been recorded by other observers. Degener removed the thyroid glands completely from twelve adult rabbits which were killed at periods varying from ten to 179 days after the operation. The hypophyses were weighed after death, and found to be distinctly heavier than in control animals. The increase in weight appeared to run parallel with the time that intervened between thyroidectomy and the death of the animal. After an interval of 179 days (six months) the pituitary had increased to about three times the normal size.

Reviews.

THE ORIGIN OF LIFE.

THE veteran author of *The Origin of Life*[1] has for years maintained that the spontaneous development of lowly forms of life may occur in solutions of various composition which have previously been submitted to sterilization by heat. He has maintained the correctness of his observations in the face of the most strenuous, and sometimes unfair, criticism, and when possible fallacies in the methods have been suggested he has always been ready to meet them. The solution principally employed is composed of distilled water with ammonium phosphate, phosphoric acid, and sodium silicate; another contains a few drops of sodium silicate and liquor ferri pernitratis to the ounce of distilled water. Tubes of soft glass about 1 in. in diameter and 3 in. long, sealed at one end and drawn out to a tapering extremity at the other are half filled with the solution through the tapering end, which is then sealed in the flame. The tubes are afterwards sterilized by heat, either by boiling in a water-bath for twenty minutes on three successive days, or by heating in a calcium chloride bath to 115° to 130° C. for from ten to twenty minutes. These prepared tubes are then exposed to daylight in an east window, or are kept in an incubator at 30° to 33° C. for some six or eight months, after which the contents are examined microscopically with or without staining. In successful experiments, Dr. Bastian claims that bacteria and torulae, and occasionally thread and mould forms, are to be found entangled in the colloidal precipitate which forms in properly prepared tubes. They are never free in the liquid. By observing the organisms in ringed cells or by transferring some of the precipitate to tubes containing a sterilized solution of ammonium tartrate and sodium phosphate, the organisms are found to multiply, and are thus proved to be living.

The solutions named were employed because, admitting that life originated at an early period of the earth's history before organic compounds had yet been formed, they would presumably be more likely to favour the development of life *de novo* than the complex organic solutions commonly employed by the bacteriologist. The solutions are in an unstable condition, and very readily yield colloidal precipitates. Silicon is employed because of its chemical affinities with carbon. There would also be present a sufficiency of carbon dioxide to yield the necessary carbon if silicon does not replace it. Such solutions do, in fact, contain all the elements necessary for the constitution of ordinary protoplasm; it is true some might be present in the minutest traces, but still sufficient for the formation of all the organisms detected, for even good distilled water contains sufficient nutrient material to support the life of millions of bacteria in every cubic centimetre! The principal criticisms which have been made regarding Dr. Bastian's work and conclusions may be summarized as follows:

1. Organisms of the comparatively high development of bacteria and torulae could not be expected to be the primitive forms which would originate *de novo*. In reply to this it may be pointed out that these organisms are not found in the solutions until a lapse of some months after their preparation—a period presumed to be sufficient for development to proceed from molecular aggregates, through ultra-microscopic into visible forms.

2. The organisms presumed to have originated *de novo* have developed from organisms originally present in the solutions—that is, the solutions have not been sterilized by the process. As against this it may be stated that the methods employed are such as in the majority of instances do yield sterile solutions, though it must be admitted that occasionally resistant organisms occur (for example, in inulin) which are not destroyed by the processes ordinarily employed for sterilization. But if control experiments show, as they seem to do, that no growths can be obtained from the solutions immediately after sterilization, this criticism to a large extent falls to the ground.

3. The organisms found are the dead bodies of organisms originally present in the solutions. Dr. Bastian admits that a few organisms, and therefore their dead bodies, are present in the solutions, but points out that the organisms found after incubation for a period of several months are far more numerous than are ever found at the commencement of the experiment.

4. The presumed organisms are "artefacts," or simulations of organisms, due to peculiar aggregates of the colloid. This is a more serious objection, because we know from the work of Leduc and others how extraordinarily colloidal and other aggregates may simulate organic forms. Moreover, such aggregates may stain and increase in numbers just as organic forms do. The crucial test is the cultivation and multiplication of the "organisms" in solutions free from the colloid, and this, too, Dr. Bastian claims to occur (in solutions of ammonium tartrate and sodium phosphate).

The work undertaken by Dr. Bastian is most laborious, and is surrounded by pitfalls, some of which are difficult to guard against. We congratulate him on the present presentation of his views. He has made out a *prima facie* case, and his work cannot be dismissed in the light-handed manner hitherto customary. Already interest has been excited in the work in several quarters, and we may expect that in the course of a year or two the correctness or otherwise of his conclusions will be established. In any case, no one can fail to admire the courage and tenacity with which Dr. Bastian has carried on the investigation of this subject, resuming, after a long interval filled by successful labours in another field, the study which had first engaged his attention at an early stage of his distinguished career.

[1] *The Origin of Life.* Being an Account of Experiments with Certain Superheated Saline Solutions in Hermetically Sealed Vessels. By H. Charlton Bastian, M.D., F.R.S., Emeritus Professor of the Principles and Practice of Medicine, University College, London. Second edition. London: Watts and Co. 1913. (Pp. 98. Price 3s. 6d. net.)

THE SURGICAL WORK OF THE BROTHERS MAYO.

IT is interesting to note the movements of the great centres of surgical influence. It may, perhaps, be said that half a century ago France—that is, Paris—dominated the surgical world; a quarter of a century later the great German schools were the most influential, while to-day the keen surgeon of our country recognizes the value of widening his outlook by a visit to the United States, or at least by cultivating a close acquaintance with the work of American surgeons. The advance in American surgery has been for the past decade or more extraordinarily rapid. It is to be accounted for by the influence of a few men. Two summers ago we had opportunities of making personal acquaintance with some of the best-known surgeons of the States when they visited this country; all were distinguished by strong energetic personality. Without disparagement of others, perhaps few features of American surgery attract British surgeons more than the Brothers Mayo and their work at St. Mary's Hospital, Rochester. In two volumes before us, entitled *A Collection of Papers Published Previous to 1909 by William J. Mayo and Charles H. Mayo*,[2] papers have been carefully collected and edited by Mrs. MELLISH with the object of preserving a complete file of the writings of these two surgeons from the time of their graduation up to February, 1909. Chronological order has been observed in the arrangement so that the development of the subject may be watched. All the original subject matter has been incorporated and careful search has been made to avoid omission.

The record of work thus presented is really enormous, not in quantity only, but in the extent of the field covered. It displays originality of conception, elaboration of detail, and careful regard for the writings and doings of others.

The subjects are too numerous and varied for us to notice all. The addresses to medical colleges and societies on the experience gained in visiting foreign clinics, and on subjects of general interest relating to the welfare of the profession, are bright and happy. The Mayos are strong advocates of indulgence in *Wanderlust*; other men and different methods must be studied, and so they tell of what they have seen in European and other American

[2] *A Collection of Papers Published Previous to 1909 by William J. Mayo and Charles H. Mayo.* In two volumes. Philadelphia and London: W. B. Saunders Company. 1912. (Roy. 8vo, vol. i, pp. 506, figs. 46; vol. ii, pp. 598, figs. 71. 42s. net.)

medical centres. The address on the "medical profession and the issues which confront it" is particularly appropriate to our country and the status of our profession to-day. The doctor starting practice is strongly recommended to keep up the habit of daily study, and is advised to put in even one hour a day reading journals and books of reference, and to make frequent trips away for purposes of observation. Thus only will he avoid the rut of self-satisfied content which checks advancement and limits usefulness.

The surgery of the intestinal tract forms the major part of this collection, and of that region the stomach has the most prominent place, no fewer than 300 pages in the first volume being devoted to that organ. The surgery of the stomach is dealt with freely, untrammelled by tradition. The gradual development of the surgical treatment of ulcer in stomach and duodenum leading up to the no-loop posterior gastro-jejunostomy can be traced through these pages. We venture to think that some of these papers will rank with the classics, and we are particularly pleased to note that the pictures by Miss Dorothy Peters illustrating gastric operations so familiar to students of the subject are here preserved. The quantity of material at the disposal of the surgeons in St. Mary's Hospital is very great. Some idea of this may be formed when we find that in the more limited region of the gall bladder and bile ducts 1,500 operations have been performed in the fifteen years ending May 1st, 1906.

We feel certain that surgeons will be glad to possess and to read these volumes. They are a mine of surgical wealth. It is true that some of the papers might well have been excluded. Even poets do not always like to see their earliest effusions printed in later years. Many of these papers are simply records of cases of little value, others embody conclusions drawn from consideration of groups of cases which are served up again in later papers. But it is easy to find the wheat. These volumes show the workings of two brilliant minds; they bristle with evidences of originality and resource; they are an exposition of virile personalities which could well have made their mark in any sphere of human activity, but which, fortunately for surgery, had an hereditary bias towards the art of healing.

DISEASES OF THROAT, NOSE, AND EAR.

IF the law of supply following demand holds good in the matter of elementary textbooks on diseases of the throat, nose, and ear, then the demand by practitioners and students of medicine for instruction in a subject which, not many years ago, was practically not taught is truly remarkable. To the large selection of textbooks on the subject Dr. W. G. PORTER has added another entitled *Diseases of the Throat, Nose, and Ear; for Practitioners and Students*.[3] His main object has been to provide the practitioner and senior student with a single volume of moderate size, embracing sufficient information on the diseases of the throat, nose, and ear to be of value in practice. We may say at once that he has attained his object. This success is to be attributed to the special attention paid to diagnosis. In a region in which so much can be brought under ocular inspection by modern methods, accurate diagnosis is possible. It cannot be too strongly emphasized that a student must be trained to be a diagnostician of diseases of the throat, nose, and ear before he can be entrusted with their surgical treatment. Dr. Porter has wisely confined his remarks on treatment within the limit that the latter can be carried out by the non-specialist. Therefore the major operations have not been described; the indications for their performance and their general features alone are given. The book naturally falls into four sections dealing respectively with the pharynx, the larynx, the nose, and the ear. Each section is prefaced by a full account of the ordinary methods of examination, and this is followed by remarks on general semeiology and therapeutics. The diseases in each section are described with a due sense of proportion. The practitioner is put on his guard against performing operations which even in the hands of experts do not always yield the gratifying results that textbooks and papers would lead him to expect. As an instance, we may take Dr. Porter's remarks, which we fully endorse, anent the surgical treatment of suppurative disease of the ethmoidal labyrinth:

> The employment of curettes, guided only by the sense of touch, is to be deprecated, as there is considerable danger of causing meningitis by fracturing the cribriform plate, or of endangering or even losing the eye by perforating the wall of the orbit.

The index unfortunately broke down under the first test. A reliable index is of all importance to the busy practitioner who has to refresh his knowledge at short notice. Accordingly we turned to a disease commonly diagnosed by the public—nasal polypus. We are referred to page 114. There is no account of the disease on that page or in that chapter or in the following chapter, but on page 128 we find the condition described and illustrated. This, however, is a defect to be remedied in the future editions which the book well deserves.

Amongst the volumes dealing with aural diseases we welcome that of LAKE,[4] which has reached the fourth edition. It has been considerably enlarged, and will be found useful both by students and practitioners who desire to become generally acquainted with the causes of deafness and its treatment. This *Handbook of Diseases of the Ear* is well illustrated in coloured drawings of various pathological conditions of the membrana tympani, and some good prints of sections of the temporal bone, depicting the various important structures it contains seen from different points of view. The definitions given throughout the book are concise and to the point, and the explanations of somewhat abstruse points are generally excellent. There are few typographical or clerical errors. The work shows evidence of a careful weeding out of all unnecessary matter, and, if any fault is to be found with it, it is that in one or two instances questions which are still *sub judice* are dealt with as if settled—for example, that of increased labyrinthine pressure. The indications for intranasal treatment are dealt with, and the chapter on the estimation of acuteness of hearing is well written, though the value of "the proportional test" to one not thoroughly experienced in its use is doubtful. Chronic non-suppurative diseases are well dealt with and most useful information given. The treatment by inflation of the middle ear is thoroughly described and valuable hints given regarding those cases in which it is inadvisable. Bárányi's test is described, but more detailed instructions and advice would have been useful. Intracranial complications of middle-ear diseases are fully discussed, but the statement that "optic neuritis or papillitis is found during the whole of this"—the second—"stage" of cerebral abscess should have been prefixed by the proviso—when present. The paragraph on post-influenzal mastoiditis is excellent, and if the hints there given were always borne in mind, some lives would be saved; for the failure to recognize that grave danger may exist with a normal temperature has been responsible for more than one death. Various prescriptions are given in an appendix, and there is a very good index.

Our great debt to Professor ONODI is increased by the addition of his book entitled *The Accessory Sinuses of the Nose in Children*[5] to the list of valuable works he has contributed towards the perfection of our knowledge of the normal anatomy of the nose and its accessory cavities. He has, in accordance with his custom, gone direct to Nature, and has elaborated his descriptions from the data afforded by 102 specimens derived from subjects varying in age from six and a half months of fetal life up to nineteen years of extrauterine existence. At some of the most interesting ages he gives skiagrams of a very informing character. Curiously it happens that in more than one of them one of the frontal sinuses is undeveloped, but it is

[3] *Diseases of the Throat, Nose, and Ear: for Practitioners and Students.* By W. G. Porter, M.B., B.Sc., F.R.C.S.Ed. With 77 illustrations, 44 of which are in colours. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1912. (Demy 8vo, pp. 287. 7s. 6d. net.)

[4] *Handbook of Disease of the Ear.* By Richard Lake. Fourth edition. Four coloured plates and 77 original illustrations. (Demy 8vo; pp. 300. 7s. 6d. net.)

[5] *The Accessory Sinuses of the Nose in Children.* By Professor Dr. A. Onodi, Director of the University Clinic of Diseases of the Nose and Throat in Budapest; with a Preface by Professor Dr. W. Waldeyer. Translated by Carl Prausnitz, M.D., M.R.C.S., L.R.C.P. London: John Bale, Sons, and Danielsson, Limited; Würzburg: Curt Kabitzsch. 1911. (Imp. 8vo, pp. 23, photographs 102. 21s.)

not contended that this indicates the true average frequency of this condition. In a chapter devoted to a consideration of the application to surgery of the results of anatomical investigation, Professor Onodi draws attention to the fact that "we observe more often than in the fully developed cavity a certain amount of blurring and indistinctness of the outline, although the sinus may be perfectly healthy." Reference is also made to the tendency for infectious disease to attack the partially developed accessory sinuses. "In the first years of childhood the value of skiagraphy and the conclusions to be drawn from it, so far as the frontal sinus is concerned, are very limited; this is shown by our results and pictures where, with few exceptions, the sinus in the first years only reaches the lower limit of the basal portion of the squama or exists as a definite cavity only in the inferior basal portion of the squama" (pp. 17–18). In view of these observations it devolves upon us all the more to study the other clinical features in our diagnosis, and above all to familiarize ourselves with the anatomy of these cavities in their various stages of development. When dealing with them the surgeon could have no more valuable work of reference than the one now before us. The descriptions of the illustrations which form what is really an atlas, are given in English, French, and German; the text of the work in English.

EMERGENCIES AND MINOR MALADIES.

To use a single word where ten will do is repugnant to a true child of the Fatherland, and accordingly Dr. RICHARD LENZMANN has chosen a lengthy title for his excellent work[6] on the pathology and treatment of emergencies. It has now reached its third edition, and has been translated into Spanish, Italian, and Russian, as we are told in the third of its three prefaces. A great deal of ground is covered by its contents, as the emergencies met with in medicine, surgery, and midwifery are most of them discussed from the point of view of a didactic and highly competent general practitioner. The first section of the book deals with emergencies arising in diseases of the brain and nerves, the second with those of the disorders of the respiratory tract. Then follow sections given to the diseases of the circulatory and digestive systems and the kidneys, emergencies that may occur during pregnancy and the puerperium, and finally come seventy pages devoted to cases of all sorts of poisonings and to the dangers occasioned by anaphylaxis. The book ends with an indifferent index. Dr. Lenzmann writes clearly and at full length, and his book is intended for the general practitioner. One cannot, perhaps, agree with all the statements it contains; Dr. Lenzmann, for example, would diagnose nephritis whenever the arterial blood pressure is found as high as 190 to 220 mm. Hg (p. 475), and he would treat acute oedema of the lungs with cardiac excitants only, and without the use of morphine. But there are singularly few omissions in this carefully written volume, and few directions as to treatment that are not well within the scope of the general practitioner's means. The book may be recommended with confidence to those for whom it is designed.

The third edition of Dr. LEONARD WILLIAMS'S *Minor Maladies and their Treatment*[7] is no less welcome than its predecessors. It contains much, we venture to believe, that the average practitioner has never really learnt or, if so, has forgotten, and in this lies its chief value. Of the vast amount of knowledge that the student of modern medicine is supposed to assimilate, a certain quantity—if we may so put it—is necessarily "bolted," resulting in a not inconsiderable residue of otherwise quite valuable mental pabulum. It is this fact that Dr. Williams has seized upon and turned to such admirable account. He has a knack of picking up these apparently unconsidered trifles and appraising them at their true value. We note, for example, his remarks on the diagnosis of diphtheria. While not disparaging in any way the value of bacteriology in this connexion, he quite properly reminds the general practitioner that, in the absence of knee-jerks and in the presence of albumen in the urine, which are to be noted quite early in the disease, he possesses a corroborative diagnosis too often ignored. He rightly lays great stress upon the far-reaching effects of eye-strain on the nervous system, apart from the occurrence of headache. The chapter on indigestion follows more or less closely modern views on this difficult subject. Quite naturally, but not obtrusively, the author indicates his preference for certain drugs or combinations of drugs in this malady, and although he banishes to the rubbish heap one or two cherished formulae, he provides some excellent substitutes. Without wishing to be accused of preciosity, however, we view the combination of potassium iodide and bismuth with a certain measure of distrust. The wine merchant, who has suffered much at the hands of the profession of late years, will be cheered to read Dr. Williams's strictures on the "whisky and soda school," and will feel grateful for his temperate appreciation of the juice of the grape. The book concludes with a very clear and instructive chapter on insanity, not omitting to mention the procedure necessary in the notification of insane persons, a matter with which the average medical man is not, as a rule, too familiar.

INTERNAL SECRETIONS.

PROFESSOR BIEDL'S book on the *Internal Secretory Organs*[8] has been translated from the German by Miss LINDA FORSTER, and issued with an introductory preface by Dr. Leonard Williams. The exact physiological study of the internal secretions has illuminated the pathology of myxoedema, cretinism, and goitre, of acromegaly, of Addison's disease, of diabetes, and of the sexual life. Professor Biedl has analysed all the experimental work which has been done up to a recent date, and gives the reader what appears to be a complete list of references to the literature in each department of the subject. Professor Swale Vincent's book on the *Internal Secretions*, published by Arnold, and recently noticed in these columns,[9] resembles in its general scope and contents Professor Biedl's work, and the English reader is now supplied with two admirable summaries of the present knowledge of the internal secretions. Each author has enriched his work with the fruits of his own research. The conceptions which result from the study of the organs of internal secretions must, when generally realized, have a profound effect on the ethical opinions of mankind. The atrophy of a small gland such as the thyroid changes a normal child into a stunted and frightful cretinous idiot; the hypertrophy and hyper-secretion of the thyroid produces the over-emotional, restless, and unstable nature of the subject of exophthalmic goitre; an adenoma of the cortex of the suprarenal gland may induce precocious development of the sexual organs in a child of 4, and lead to his expulsion from the kindergarten school for offences against little girls; castration of the child entirely changes the development of the sexual secondary characteristics and the mental and moral nature; the transplantation and successful grafting of an ovary, in place of the complete removal of both, ensures the continuance of menstruation and sexual appetite; the sexual organs of each sex contain developmental traces of the opposite sex organs, and each of us is to a greater or less extent a hermaphrodite in mental nature. A greater tendency towards the characteristics of the opposite sex may lead to non-sexuality, or to sexual perversion, change the life not only of the subject, but of his or her mate, and help to swell the sum of human misery and the work of the Divorce Court. These are the facts which the philosopher, the priest, the politician, and the judge have to grasp. The efficacy of prayer and moral training are powerless to help the cretin, while thyroid tablets will convert him into a normal and useful being. No man by taking thought can add a cubit to his own stature, but he can add many inches to a boy, who is too short to enter the navy, by feeding him with thyroid if the cause of the arrested growth is deficiency of this gland.

[6] *Die Pathologie und Therapie der plötzlich das Leben gefährdenden Krankheitszustände.* By Dr. R. Lenzmann. Third edition, revised and enlarged. Jena: G. Fischer. 1913. (8vo, pp. xviii and 664. Mk.12.50 paper; Mk.14 bound.)

[7] *Minor Maladies and their Treatment.* By Leonard Williams, M.D., M.R.C.P. Third edition. London: Baillière, Tindall, and Cox. 1913. (Cr. 8vo, pp. 404. 5s. net.)

[8] *The Internal Secretory Organs, their Physiology and Pathology.* By Professor Arthur Biedl. Translated by Linda Forster. London: J. Bale, Sons, and Danielsson, Limited. (Roy. 8vo, pp. 592; price 21s. net.)

[9] BRITISH MEDICAL JOURNAL, October 19th, 1912, p. 1060.

NOTES ON BOOKS.

IN the preface to his book on *Geometrical Optics*[1] Mr. A. S. PERCIVAL states that it is primarily intended for medical students preparing for the preliminary scientific examinations, but that it also contains most of the optics necessary for the ophthalmic surgeon. The work treats of the nature of illumination, pinholes and shadows; reflection at plane surfaces; reflection at a spherical surface; refraction at plane surfaces; refraction at spherical surfaces; and finally of lenses. At the end of each chapter a few examination questions are given for the student to work out, and the answers are contained in an appendix. It will be seen that the theory of the ophthalmoscope and of retinoscopy are not included, and so the book would not be sufficient for a candidate for a diploma in ophthalmology. It is really a mathematical treatise upon optics, and as such is eminently useful to a student who is reading for an examination in pure optics. The subject is treated as simply as possible, and a knowledge of algebra and trigonometry will allow the reader to follow the demonstrations. The author insists that the use of cardinal points—a valuable procedure—has been much neglected, and he treats the solution of the problem in a simpler manner than is customary.

Practitioners of all classes will be interested in the publication of Dr. JOHN B. MURPHY'S *Surgical Clinics*.[2] A number is issued bimonthly and contains the clinical account of various representative cases. The story of each appears to have been taken down in shorthand and published very much in the same language as was used at the clinical demonstration. This method, when carried out in describing the steps of an operation as the various structures are dealt with, is apt to lead to confusion; indeed, the description of many of the operative procedures is ragged. We find, further, that even very simple questions put to the intern—that is, the house-surgeon—and equally simple answers on matters of fact are inserted verbatim. The Socratic method is most excellent in clinical education, but Socratic questions should lead up to something, should conduct the learner gently and by the use of his own reasoning powers along the path of knowledge. Simple facts, such as dates of previous operations, and the temperature of the patient, would better be given in preliminary statements.

"But to return to static treatment," writes Dr. HOWARD HUMPHRIS, when discussing neurasthenia in his *Electro-therapeutics for Practitioners*.[3] And that is what Dr. Humphris is often doing; very frequently does he return to the static treatment. Seven chapters at the beginning of this volume are devoted wholly to static electricity, and elsewhere we find it referred to in connexion with the treatment of many ills, from eczema, herpes, and pruritus, to sciatica, and synovitis, and rheumatoid arthritis, and constipation, and dysmenorrhoea. Some emphasis is placed upon its value in enlarged prostate, and in the form of the static bath it is recommended as an adjunct in the treatment of inebriety. The only considerable section in which there is no reference to this agency seems to be that dealing with malignant disease. Here, apparently, the static machine is impotent, except, of course, as a means of exciting the *x*-ray tube. Dr. Humphris would probably plead guilty to being an enthusiast for the static modalities, and the consequence is that, in spite of the catholic title of the book, the other forms of medical electricity get rather short shrift. But his enthusiasm has, at any rate, given to his essays—for that is how he describes these sharply cut chapters—a refreshingly personal and original outlook. The pages in which he advances his electrical theory of pain, for instance, whether convincing or not, are an oasis in the dry desert of electrical literature, and so is his frank discussion of the failures encountered in this branch of medical healing, with its recognition that there is such a thing as idiosyncrasy to electricity, apart from electrophobia. The incandescent light treatment also occupies a good deal of space, and the author foreshadows, not in so many words, the prospect of a light bath in every home, in which the overworked and sedentary slaves of our latter-day civilization may recoup their energies and regain their tone. The work may not be as comprehensive as a textbook—Dr. Humphris disclaims that description for his modest volume—but it is decidedly more interesting than many.

The British Guiana Medical Annual for 1911,[4] though somewhat late in putting in an appearance, is nevertheless welcome. It contains the following papers: (1) The narcotics and stimulants of the Guianese Indians, by Walter E. Roth (Commissioner of the Pomeroon District; (2) Trichosporosis nodosa, by J. W. H. Macleod, M.D. (reprinted from the *British Journal of Dermatology*, April, 1912); (3) A case of tinea cruris in British Guiana, by J. H. Conyers, M.B., C.M.; (4) Causes of cough, by Mrs. E. M. Minett, M.B., B.S.; (5) The treatment of leprosy by nastin and benzoyl chloride, by E. P. Minett, M.D., D.P.H.; (6) Studies in enteric fever, by K. S. Wise, M.B., B.Sc., D.P.H.; (7) The frequency of *Bacillus violaceous* in the water and milk supplies of British Guiana, by E. P. Minett, M.D., D.P.H., D.T.M.and H.; (8) Reviews of the milk question in British Guiana, by K. S. Wise, M.B., B.S., B.Sc., D.P.H., and E. P. Minett, M.D., D.P.H.; and (9) Myiasis, by F. E. Field, M.D., D.P.H. Part II is devoted to clinical notes. Part III contains the *Transactions* of the British Guiana Branch of the British Medical Association for 1911 and 1912; while Part IV deals with the public health, statistics, and medical institutions of the Colony. Many of the papers are of interest and importance, and are worthy of careful perusal.

The fifth edition of *Physical Diagnosis*,[5] by Dr. R. C. CABOT, is as attractively illustrated as its predecessors. The pictures, indeed, have been considerably increased, and the book as a whole is likely to be regarded in every wise as satisfactory a guide as the earlier editions. It is clear and practical throughout, both qualities being partly due, no doubt, to the principle on which it is written. The author, who is the Assistant Professor of Medicine at Harvard University, does not attempt to describe every method of physical diagnosis ever suggested by any one. In respect of technique he details solely those with which he himself is familiar and has found useful, but sometimes records the information stated to be obtained by other methods. A case in point is the use of electro-cardiograms.

MEDICINAL AND DIETETIC ARTICLES.

An Acetone Soap.

WE have received from Mr. W. Martindale (10, New Cavendish Street, London, W.) a sample of acetone solution of soap. This is a clear stable liquid containing about 25 per cent. of soft soap. The solvent and penetrating properties of the acetone are added to the cleansing properties of the soap, and we have not observed any unpleasant effect on the skin as a result of using it. It will doubtless prove a useful preparation.

Salts of Emetine for Hypodermic Injection.

The observations of Professor Leonard Rogers, recorded in our columns, on the great value of hypodermic injections of salts of emetine in amoebic hepatitis and amoebic dysentery have led to a considerable demand for the pure salts of this alkaloid. We have received from Messrs. Whiffen and Sons, Limited (Lombard Road, Battersea, S.W.) samples of emetine hydrochloride and emetine hydrobromide prepared by them; they are white minutely crystalline salts, readily soluble in water. For hypodermic use the salt employed should be dissolved in sterile normal saline solution. It was for a long time supposed that the value of ipecacuanha in dysentery was due to some constituent other than the alkaloids, and to obviate the vomiting caused by the drug "de-emetinized" ipecacuanha, or ipecacuanha from which most of the alkaloid had been removed, was largely employed, but failed to give the desired results. Professor Rogers's recent observations have shown not only that emetine is the important constituent of the drug in the treatment of dysentery, but also that when given hypodermically it does not usually cause vomiting.

[1] *Geometrical Optics.* By Archibald Stanley Percival. London: Longmans, Green and Co. 1913. (Med. 8vo, pp. 138; figures 59. 4s. 6d.)

[2] *The Surgical Clinics of John B. Murphy at Mercy Hospital, Chicago.* Philadelphia and London: W. B. Saunders Company. (Med. 8vo, six vols. 35s. a year.)

[3] *Electro-therapeutics for Practitioners.* By Francis Howard Humphris, M.D., F.R.C.P.Edin. London: Edward Arnold. 1913. (Demy 8vo, pp. 252; figs. 57. 8s. 6d. net.)

[4] *The British Guiana Medical Annual* for 1911. Edited by K. S. Wise. Eighteenth year of issue. Demerara: Printed by the "Argosy" Company, Limited, Printers to the Government of British Guiana. 1913. (Demy 8vo, pp. 108. 5s.)

[5] *Physical Diagnosis.* By Richard C. Cabot, M.D. Fifth edition, revised and enlarged. London: Baillière, Tindall and Cox. 1913. (Royal 8vo, pp. 542; plates 5, figs. 267. 15s. net.)

TREATMENT OF FRACTURES.

Preliminary Report of the American Committee.

The American Surgical Association at its meeting in Montreal in 1912 appointed a committee, consisting of Dr. John B. Roberts (chairman), Dr. Edward Martin, Dr. W. L. Estes, Dr. Thomas W. Huntington, and Dr. John B. Walker, to report on the relative value of the operative and non-operative treatment of fractures of the long bones, and on the value of radiography in the choice of the method of treatment.

This committee presented a preliminary report to the meeting of the American Surgical Association held in Washington on May 6th, 1913.

The committee expresses its high appreciation of the value of the report issued by the Fractures Committee of the British Medical Association (published in the British Medical Journal of November 30th, 1912), and in a preliminary discussion of that report points out that in it all recent closed fractures not treated by incision and fixation of the fragments were included in the non-operative category, which, therefore, must have included some cases that not even the ardent advocates of operation would consider proper for operative treatment. The statistics in the operative class of cases referred almost entirely to selected cases under the care of surgical experts, though among the fractures in the non-operative class were some presenting serious general and local lesions, and many treated by practitioners of no special skill in fractures. The members of the American Committee think it possible that the non-operative results would have been better had all the cases been in the hands of experienced surgeons, and had the complicated fractures been eliminated. To obtain a true estimate of the value of the best non-operative means of treating those fractures, they contend that only the best non-operative method should be compared with an operative method used in selected cases by experts.

The American Committee proceeds to point out that the general methods for the non-operative treatment of fractures are immobilization, early gentle massage or friction, and an intermediate method, now largely used in the United States, by which a considerable amount of passive and active mobility with friction is allowed early in the treatment of fractures. This method is probably more frequently adopted in the treatment of fractures of the upper than of the lower extremity, because in American hospitals patients with fractures of the upper limb are largely treated as ambulant cases.

In order to afford data for forming an estimate of the relative value of the two methods—the non-operative and the operative—of closed fractures of the long bones of the limb, the circumstances should be the same, and the Committee observes:

The surgical attendant in each case should be equally skilled, the fracture identical in character and situation, and the patients similar in temperament, in environment, and in social and financial standing. Diagnosis in both forms of treatment should be made with the aid of the *x* ray and immediate reduction attempted under anaesthesia and the method of treatment then selected. After a few days the correctness of the reduction should be confirmed by *x* rays, and attention given to active and passive motion of the joints to prevent stiffness occurring as the result of traumatic arthritis, which often happens in fractures, as it does in sprains. Prolonged abstinence from weight-bearing must be insisted upon in fractures of the bone of the lower limb.

The three questions the American Committee set itself to answer were:

I. What should be the routine method for the average general practitioner and those unskilled in surgery as a speciality?

II. What should be the routine treatment for trained surgeons with the usual facilities afforded by small or cottage hospitals?

III. What should be the routine treatment for skilled surgical experts with adequate hospital facilities?

It answers these questions as follows:

For all three classes of medical attendants the Committee believes that *prolonged* immobilization with *continuous* fixation by means of external splints or apparatus should be abandoned. This ancient method frequently leads to bad anatomical and bad functional results. The evil sequels may be caused by concealment of imperfect reduction or by overlooked later deformity from imperfect maintenance of coaptation of fragments. Ankylosis of joints may arise from unrecognized coincident traumatic arthritis or from prolonged immobility of proximal joints. Pressure sores, ischaemic palsy, and gangrene may follow the omission of frequent examination of an exposed limb. This method, fortunately, has long been abandoned by the surgical expert. Some surgeons and medical attendants mentioned in the first class may not yet have replaced the immobilization method by more modern procedures.

I.

For the first class, which includes all those not trained in surgery as a speciality, the Committee suggests the study and adoption of a routine method midway between that of immobilization on the one hand and the mobilization of Lucas-Championnière or the traction method of Bardenheuer on the other. It is believed that either the method of the French surgeon mentioned or that of Bardenheuer, the German expert, probably will be found to require too much skill, experience, and attention to be safe in the hands of those who only occasionally have need to treat the more troublesome fractures. For these general anaesthesia should nearly always be employed for the diagnosis and reduction of the fracture, unless *x* rays are used during the manipulations preceding the application of the fracture dressing. General anaesthesia should always be used by such practitioners in the diagnosis and reduction of fractures involving joints. It alone will solve many difficulties of diagnosis and often simplify the subsequent treatment of the injury.

If reliance is placed upon *x*-ray readings, the study of the skiagraphic plate must be under the direct supervision of a medical man accustomed to both clinical and radiographic examination of bone lesions. The radiographic reports of even expert radiographers alone are not always reliable guides to surgical practice. They must, as other pathological reports, be studied in association with expert surgical experience and clinical observation.

The maintenance of reduction of the fragments should be assured by position, traction, splints, or other easily removable and adjustable apparatus. Splints should be so arranged as to allow easy and frequent inspection of the condition of the fragments and soft parts, and to permit early passive and slight active movements. Moulded splints of gauze and gypsum or other plastic materials fit well, and best fulfil the above requirements. The watchwords for this first class of practitioners are general anaesthesia, plastic splints or traction, frictions, and frequent inspection, early mobility, delay in weight-bearing.

II.

By most trained surgeons in America, restricted by the moderate facilities of small or cottage hospitals, prolonged immobilization has probably been largely discarded already, when they take personal care of the entire treatment of a fracture. This is especially true of patients in private practice. Mobilization, less than that advised by Lucas-Championnière, or traction apparatus, to a less extent than that used by Bardenheuer, varying with the locality of the injury, has been adopted by many, and probably should be adopted by all such surgeons for the usual run of fractures. One or the other method will probably continue to be the routine at the hands of the class of surgeons mentioned in private practice and in small hospitals with moderate facilities.

This opinion suggests, it will be observed, that the operative treatment be restricted to especially rebellious fractures known to be such or found to be such after a very few days' study. This judgement is recorded because of the difficulty under such circumstances of insuring perfect asepsis and sufficient trained assistance.

The troublesome fractures that may with propriety be mentioned as probable candidates for operative treatment are:

Fractures of the surgical neck of the humerus, T-fractures at the lower end of the humerus, fractures of the upper third of the radius, fractures of the upper third of the radius with dislocation of the radial head, fracture of the radius and ulna in the shafts, especially in adults; fractures of the upper third of the femur, supra-condyloid fractures of the femur, fractures of the tibia and fibula near the ankle occasionally. In a general way it may be said that operative treatment suggests itself as the preferable method in any fracture which cannot be properly reduced or retained after reduction.

If operative treatment be selected, the metal plate under absolute asepsis is the final resource, unless open reduction alone, or sutures, nails, or screws be effective.

When reduction of fragments is not easily gained or its maintenance is doubtful, plating will be usually found better than wiring. A few cases will not need direct fixation after the reduction has been accomplished through the incision. The operation should be immediate—that is, within a week or ten days after the receipt of injury. It is, in fact, better to operate within a few hours than to delay even a few days, unless shock or other contraindication requires delay. The method selected by the surgeon within the first week should, as a rule, be continued, if the surgeon be familiar with both operative and non-operative procedures.

III.

As to the routine treatment for skilled surgical experts with adequate hospital facilities, the Committee considers that if prolonged immobilization has not been discarded, the surgeon can hardly be termed a skilled surgical expert in fracture treatment. He is behind the times in the surgery of fractures, though he be a recognized expert in abdominal, cerebral, thoracic, or pelvic surgery or other branches of the medical art. To a fracture specialist with the facilities, a sufficient number of trained assistants, and the other essentials of a well-organized modern hospital, it makes little real difference in morbidity or mortality whether he select the non-operative or the operative plan. The latter, like all aseptic surgical procedures, requires more time, more care, and more conscientious service at the beginning, but makes the after-days easier for the surgeon, less painful for the patient, and less troublesome for the nurses. These surgeons may at times gain great advantages from the use of the fluoroscope while adjustment is in progress.

The time must soon come when metropolitan hospitals will not be considered satisfactorily organized unless fractures are assigned for treatment to specially equipped wards under the care of surgeons particularly interested in the pathology and treatment of these injuries. Gunstock deformities of the elbow, forearms incapable of full pronation and supination, deformed wrists, valgus ankles, coxae varae, and shortened and crooked femurs all too frequently prove the need for increased surgical skill, perhaps specialism, in the treatment of fractures of the tubular bones of the extremities.

It is probable, though not certain, that consolidation of a fracture takes place a little more slowly after direct fixation of fragments with a metal plate than in a well-reduced fracture under non-operative treatment. The statement that the surgical expert will be able to conduct in safety the patient to the point of recovery with good result in most fractures by either the operative or the non-operative route is only true provided he personally dominates the situation as to reduction, fixation, and after-treatment, and sets the time at which the patient shall be allowed to resume his original occupation. Such a surgeon, if of a mechanical turn of mind, will obtain good anatomical and good functional results in many fractures without blood-letting measures. In others he will not fail to recognize early the need for open reduction and direct fixation, nor will he fear sepsis, haemorrhage, or shock. Similarly he will seldom fail to recognize those cases in which these risks of operation outweigh the benefits likely to be obtained through it. Then some of his patients will be treated by non-operative methods, and may, perhaps, show poor anatomical restoration of the skeleton, as well as bad functional use of the injured limb. They will, however, live.

If, on the other hand, this expert have more liking for operative surgery and a mind less mechanical in its attitude toward fracture repair, he will apply operative procedure to a greater number of fractures than will his colleagues above mentioned. He will, however, equally recognize those cases in which operative surgery of the blood-letting kind has no place.

The report of the American Committee concludes by suggesting to Fellows of the Surgical Association a series of questions to which they might give attention, with the object of presenting succinct reports of the result of their inquiries two months before the next annual meeting of the American Surgical Association.

THE Royal Dental Hospital, Leicester Square, has received a donation of £400 from the trustees of Smith's (Kensington Estate) Charity.

THE Board of Management of the Metropolitan Convalescent Institution announces that at the Home for Adults at Walton, near Weybridge, 24 beds are now provided for patients requiring surgical treatment after operation.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE, 1913.

SECTION OF STOMATOLOGY.

THE Stomatological Section will hold its meetings in the lecture theatre of the Royal Dental Hospital, Leicester Square.

The following discussions have been arranged:

The pathology and treatment of peridontal disease. To be opened by Dr. N. N. Znamensky and Mr. E. B. Dowsett as reporters.

The relation of nasal obstruction to dental disease. To be opened by Dr. Jules Ferrier and Mr. J. G. Turner.

Dental disease in relation to public health, which will be introduced by Dr. Harold Williams and Dr. J. Sim Wallace.

A discussion on the supervision of the health of children between infancy and school age will be held conjointly with the Section of Hygiene and Preventive Medicine. Mr. W. W. James will report on behalf of the former Section, and Dr. Leslie Mackenzie on behalf of the latter.

The final discussion of the meeting will be on reflex and functional disturbances in connexion with teeth, Drs. Rousseau-Decelle and A. W. W. Baker being the reporters.

The papers to be read include the following:

The enamel organ and its products, by A. S. Underwood and A. W. Wellings, assisted by T. G. Brodie and Lovatt Evans.

The relation of mouth conditions to cancer of the alimentary canal, by Mr. F. St. J. Steadman, founded on an extended clinical investigation of cases in various London hospitals.

Dr. J. Zilz, of Hungary, will read a paper on general infection via the tooth pulp, and Dr. Besson will discuss suppuration in the temporal fossa of mouth origin.

Mr. K. Goadby will contribute a paper on arthritis deformans of mouth origin.

There will be a clinical demonstration at the Royal Dental Hospital on Monday, August 11th, at 5 p.m., of cases of interest collected from the various dental hospitals in London. It is anticipated that between seventy and eighty patients will be shown. In addition there will be an exhibition of pathological specimens and stereoscopic skiagrams. To this gathering the Stomatological Section will welcome any members of the congress.

Some special entertainments have been arranged. A dinner will be held at the Hotel Metropole on Friday, August 8th, and on Saturday the President of the Section will give a garden party at Phyllis Court, Henley.

The President of the Section is Mr. Morton Smale and the Secretary is Mr. J. F. Colyer, 11, Queen Anne Street, W.

A SCHEME FOR MEDICAL ATTENDANCE ON WORKMEN.

WITH the concurrence of its workmen the Metropolitan Water Board applied for exemption from the Insurance Act, and submitted to the Commissioners a scheme which was accepted by them. While giving the men better terms than they would have received under the Act, it does not provide for medical attendance. Most of the 3,000 workmen were in clubs, into which they paid 1d. a week for medical attendance, and it was found that they were willing if they had free choice of doctor to continue paying this 4s. 4d. per annum if the Board would pay the difference between that sum and the amount agreed to by the Board's district medical officers. After conferences with the doctors and the men a subcommittee of the Board recommended the following terms, which have been provisionally accepted by all concerned:

1. An inclusive payment to the doctor of 10s. per annum for each man on his list, this sum to include attendance, medicine, and all certificates required by the Board.
2. A payment of 3s. 6d. for first aid and a special fee for serious surgical cases.
3. Every medical practitioner who, on April 1st, 1913, was attending not less than twenty-five of the Board's permanent employees to be included among the medical officers.

The total estimated cost of the scheme is £1,500 a year, and of this sum the men will contribute about £625.

This scheme was entered into with good will by the Board, the doctors, and the workmen, was carried out in a spirit of give and take, and ultimately accepted by the representatives of all concerned as a good working compromise. It is in pleasing contrast to the bungling and irritating schemes of the Insurance Commissioners in too many instances.

Nova et Vetera.

PROVERBIAL MEDICINE.

PROVERBS ON ARTICLES OF FOOD—BREAD AND CHEESE.

MOST of the ordinary articles of food make their appearance in one or more of the proverbs which are in common use; in this way their chief characters, or their supposed characters, are emphasized, and some at least of these are medical in their nature. A beginning may be made with bread and cheese, although "some folk by nature do abhor cheese," and others hate cats, perhaps for no better reason.

Swift, in *A Tale of a Tub*, makes Peter say, "Bread, dear Brothers, is the staff of life"; and this saying must be a very old one. Homer, in the *Odyssey*, speaks of bread as the "marrow of men" (μυελὸς ἀνδρῶν); and Matthew Henry, in his *Commentary* on the Psalms (Ps. civ), says: "Here is bread which strengtheneth man's heart and therefore is called the staff of life." Lean[1] also has found "staff of life" in Howell's *Parley of Beasts*, published in 1660. Well, too, does the writer remember a reproof he received when a child for passing a piece of bread to a guest on the sharp end of a knife: would you offer the staff of life on the point of death? The paramount position in nutritional values which is occupied by bread is recognized by its name being sometimes used as synonymous with subsistence or means of livelihood; and "to take the bread out of one's mouth" or "to know on which side one's bread is buttered" have another meaning than the strictly literal one. Lean[2] quotes from Havergal's *Herefordshire Words and Phrases* this distich:

> Bread when you're hungry, drink when you're dry,
> Rest when you're weary, and Heaven when you die;

and it is true that most of life's pressing needs are thus supplied.

But one can have too much even of a good thing, although Rosalind asked, "Why, then, can one desire too much of a good thing?" and Herrick sings:

> Bad are all surfeits, but physicians call
> That surfeit took by bread the worst of all.

Perhaps the reason is to be found in the binding tendency of bread—at any rate, of white bread—for does not brown bread help to check constipation? There is a proverb which gives no uncertain sound on this matter—namely, "Bread's a binder, wealth's a miser; drink down care and thou art wiser"; Lean quotes it from Brathwayte's *Barnaby's Journeys*.[3]

New bread is difficult of digestion and does harm, and yet all over this country the bakeries are at work at two o'clock in the morning to supply freshly-baked bread! There is a French proverb[4] which warns against too new bread: it runs thus: *Le pain de nuit Grandement nuit*—that is to say, last night's bread greatly hurts; or, to make a rhyme for the nonce, Last night's baking sets you aching. In another language there is a similar saying: *Nacht broot is een letsel groot;* and an Italian proverb[5] seems to refer to the pain in the back due to indigestion, for it reads: *Quando se taia pan frescho, se fa doler la schena a quei che lha fatto.* Peter Lowe,[6] writing more than 300 years ago, gives counsel on the kind of bread which should be preferred: "Good breade of wheate, that is neither over new, nor too stale, as counsaileth Avicen; for over new and hote bread doth digest evill, altereth the body, and ingendereth obstructions, sending vapours and fumes to the head." Again, W. Ellis, in *The Modern Husbandman*, ascribes great force to new bread, and quotes the saying, "New beer, new bread, and green wood will make a man's hair grow through his hood," whatever that terrible result may be.

There are proverbs which define exactly the best age of bread for eating. Bohn (in his reprint of Ray) gives "Bread of a day, ale of a month, and wine of a year"; and two French proverbs (both from Joubert's collection) read, *Pain d'un jour, vin d'un an, farine d'un mois*, and *Oeuf une heure, pain d'un jour, chair d'un an, poisson de dix*. Lowe, again, gives the reason why too old bread is not good: "It drieth too much and remaineth long in the stomacke." To digest bread of a fortnight old calls for an insatiable hunger; at least, that is what Meurier's proverb of the sixteenth century seems to mean, *A pain de quinsaines, faim canine de trois semaines*. Proverbs, however, are not at one on this question of stale bread. In a play of Ben Jonson,[7] Peter Onion says to Antonio, "My mind to me a kingdom is"; Antonio answers, "Truly a very good saying." Onion then says, "'Tis somewhat stale, but that's no matter," and Antonio goes further: "O, 'tis the better, such things ever are like bread, which the staler it is the more wholesome." Bullein[8] says both are to be avoided: "And also bread muste neither be eaten new baken, nor very stale or old, for thone causeth drynesse, thirst and smoking into the hed, troubling the brains and eies, through the heat thereof. The other drieth the body and bringeth melancoly humours, hurting memori. The best bread is that which is of a day old, and the loves or manchets may neither be greate nor little, but mean." We may leave the virtue of stale bread undecided; probably there are two opinions about it to-day even.

There are differences of opinion, too, regarding the grain which makes the best bread. To quote Robert Burton, "By profession a divine, by inclination a physician," we find the following:[9] "Bread that is made of baser grain—as pease, beans, oats, rye, or overhard baked, crusty, and black—is often spoken against, as causing melancholy juice and wind. Joh. Mayor, in the first book of his *History of Scotland*, contends much for the wholesomeness of oaten bread. It was objected to him, then living at Paris in France, that his countrymen fed on oats, and base grain, as a disgrace; but he doth ingenuously confess, Scotland, Wales, and a third part of England, did most part use that kind of bread, that it was as wholesome as any grain, and yielded as good nourishment. And yet Wecker (out of Galen) calls it horsemeat, and fitter for juments than men to feed on." This quotation, by the way, seems to cast some light on Johnson's famous definition (now proverbic in force) of oats: "A grain which in England is generally given to horses, but in Scotland supports the people," and on Lord Elibank's repartee which it provoked, "Very true, and where will you find such men and such horses?"[10] Dr. Johnson, it is well known, was an enthusiastic student of Burton, and the latter's *Anatomy* was the only book that ever took him out of bed two hours sooner than he wished to rise. It is more than likely that the sentences quoted above were in his mind when he defined oats. Burton,[11] in another place, names the Chinese as "scoffing at our Europeans for eating bread, which they call tops of weeds, and horse-meat, not fit for men." Well, well, every one to his taste; but it is to be remembered that "all breads are to be eaten, and all maids to be wed."

"Bread with eyes and cheese without eyes" is a Spanish proverb, given by Ray; and Bullein[12] says, "The lighter the bread is, and the more full of holes: it is the holsomer, as Averrois and Rasis saye"; this we take to mean that light bread and solid cheese are best. But what, we wonder, is the origin of the superstition, "A hollow loaf is a sign of death?" Is it because it is hollow like the tomb, or because it betokens a scarcity of grain? In this connexion it may also be asked why it is a bad omen if bread-and-butter fall on the buttered side; and why it is unlucky to take the first slice or outside of a loaf—the so-called "loun's piece." Perhaps the buttered side is more likely to have the dirt of the floor adhere to it, perhaps it is impolite or selfish to take the first slice; but these are hardly convincing explanations. Ramsay's proverb, "Broken bread makes hale bairns" is a puzzling one, too. Why should the fragments left from a meal make healthy (whole) children? Of course the verbal point of the proverb lies in the contrast between broken

[1] Lean's *Collectanea*, vol. i, p. 479, 1902.
[2] Ibid., p. 478.
[3] Ibid., vol. i, p. 480, 1902.
[4] Ibid.
[5] Ibid., vol. ii, p. 177, 1903.
[6] P. A. Lowe, *Discourse of the Whole Art of Chyrurgerie*, 2nd edit., p. 44, 1612.
[7] B. Jonson, "The Case is Altered," Act I, Sc. I; *Plays*, vol. ii, p. 666, Everyman Edition.
[8] W. A. Bullein, *A Newe Boke of Phisicke*; the Governement of Health, p. 186, 1558.
[9] R. Burton, *Anatomy of Melancholy*, Part I, Sect. ii, Mem. ii, Subsect. 1.
[10] Boswell's *Johnson*, Birkbeck Hill's edit. i, p. 29[illegible].
[11] Burton, Ibid., Subsect. 3.
[12] Bullein, W., *The Government of Health*, p. 186, 1558.

and whole; but the saying may perhaps have been meant for the pampered child, who turned away his head from plain bread and demanded cake. There is another Scots proverb, "A bread house skailed never," meaning that a house with bread in it is never empty; it is used, says Wright,[13] "when we have bread and perhaps want something finer."

After all has been said, we shall come back to this, that bread is of the first importance. In *Don Quixote* is the old Spanish saying, *Todos les duelos con pan son mencs* (All sorrows are less with bread). Burton[14] says, "S. Hierome estcems him rich that hath bread to eat" (*Satis est dives qui pane non indiget*); and in Juvenal[15] we read: "Two things only the people anxiously desire, bread and the circus games" (*Duas tantum res anxius optat, panem et circenses*). The Herefordshire distich (quoted above) has its counterpart in the Italian proverb,[16] *A fame pane, a sete aqua, a sonno panca* (For hunger bread, for thirst water, and for sleep a plank or bench); and there is a French saying,[17] *Pain le meilleur metz à qui a faim* (Bread is the best dish to him who is hungry). "Bread at pleasure, drink by measure" is a good motto; and "Better halfe a lofe than no bread" is a piece of worldly wisdom.

That "ever famous Thomas Moffet,[18] Doctor in Physic," has preserved for us two proverbs of the Elizabethan age both touching upon bread, and both with a medical flavour in them. Dr. Moffet, for so his name is to be spelt, and not Muffet or Mouffet, was very high in his praise of bread; he never saw, read, or heard of any man that naturally hated it; it is, he thought, the staff of life, without which all other meats would either quickly putrefy in our stomachs, or sooner pass through them than they should, whereupon crudities, belly worms, and fluxes do arise to such children or persons, as either eat none or too little bread; it is never out of season, disagreeing with no sickness, age, or complexion, and therefore truly called the companion of life; it neither inflameth the choleric, nor cooleth the phlegmatic, nor overmoisteneth the sanguine, nor drieth the melancholic; it also best nourishes both man and beast; is mentioned in Genesis and in the Lord's Prayer; and indeed, "all troubles are easie with bread, and no pleasure pleasant without bread." Here are his two proverbs: "Money and bread never brought plague," and "Bread and cheese be the two targets against death." Of course it is possible that the plague of the first of these sayings simply means any trouble or annoyance not necessarily of the nature of a disease, and it is hardly likely that it signifies the great plague; but yet it may indicate a malady of some kind. The second proverb is very interesting, for it gives us the verbal picture of a man defending himself against his Apollyon with a shield or buckler in each hand, one of bread and the other of cheese! Whether he is thus "lock'd up in steel" against all death's darts may be doubted; but there is no denying that much may be done on bread and cheese, and in the case of bachelors, with kisses added, so goes the adage.

Cheese has been mentioned in alliance with bread, and the alliance is a good one; but the proverbs on cheese are important enough to be considered separately. There is one at least which comes into conversations pretty often and has quite an up-to-date peptonizing sound about it, although exactly what it means would form a hard question in a physiology examination paper. "Cheese is a peevish elf, It digests all things but itself." In this proverb the phrase "peevish elf" may be taken to mean a perverse, obstinate, contrary sort of little creature, freakish in his behaviour, doing for others in the matter of digestion what he will not or cannot do for himself. The writer, when a child, well remembers a story he was told to explain this mysterious statement about cheese; it was a story which fixed itself firmly in his mind, probably by reason of its gruesome ending, and possibly, who knows, turned his young thoughts to the art of healing. It was about a very clever but somewhat eccentric and rough spoken doctor; there seemed to be a fashion in that particular type of medical man in those days. A child was ill, and the doctor was sent for; he was busy (confinement case it may be, such things being commoner then than now) and could not go, but inquired what the child had been eating. He was told it was cherries—a great many of them. "Then give him cheese," was the voice of the oracle. The child grew worse, and the anxious parents sent again; the doctor, still busy, asked if his orders had been carried out, found they had not been, and again repeated them, "Give him cheese." The child, however, was not given cheese, and died. The doctor then came along, but too late: "Why did you not give him cheese?" Then, to show that he had offered the best advice, so the story went (becoming a trifle blood-curdling to the lay mind), the doctor cut open the little one's stomach, revealed the cherries lying there in a heap, called for a piece of cheese, put it on them, and immediately they were seen to melt away.

There are two medical maxims[19] of the School of Salerno, one at least of which has a bearing on the "peevish elf" proverb. The one is *Caseus est nequam quia concoquit omnia secum*, or "Cheese is bad because it digests all other things with itself;" and the other is *Caseus est sanus quem dat avara manus*, or "Cheese is wholesome when given with a sparing hand." The former is evidently another version of the saying about cheese digesting everything but itself; and the latter seems to refer to the fact that cheese is a highly nutritious form of food, to be taken, therefore, in moderation. Both ideas appear in the position commonly assigned to cheese in a meal, expressed in Ray's laconic proverb, "After cheese comes nothing." Lean[20] has found a sort of rhyming version of this in Franck's *Northern Memoirs*—namely, "Cheese after meat prohibits other dishes, and after shellfish rarely other fishes."

There is a medical flavour in a number of other proverbs about cheese. Lean is our source for a saying found in the Harleian MSS. (6395), "Cheese is physic for gentlemen and meat for clowns"; the "fees" in the adage "Bread and cheese for the sound are good fees," are probably perquisites, wages, or rewards. Cheese is also conjoined with bread in the Latin proverb, *Caseus et panis sunt optima fercula sanis*, and with an onion in the other Latin one, *Caseus et caepe veniunt ad prandia saepe;* about butter and about fruit as well as about cheese it has been said "Gold in the morning, silver at noon, lead at night." Two French proverbs emphasize the wisdom of eating little cheese or none at all, namely, *Fourmage qui moins en mange est tenu le plus sage*, and *Jamais homme sage ne mangea fromage;* but if a man must have his cheese with his bread then another French proverb says, *Pain legier, pesant fourmage, devez toujours prendre si vous estes sage;* and Howell gives "White loaf and a hard cheese never shames the master."

For a proper appreciation of the meaning of some of these old sayings about bread and cheese, it is almost necessary to know the varieties of bread and the characters of the cheeses which were eaten in the days of the Tudors or even earlier. The white, brown, and black breads of the past; the white, wheaten, and household breads; the rye, oaten, barley, maslin (mislin), and mongcorn breads; and cheeses innumerable have ceased to be found in the common language of a people who buy their bread from the baker and their cheese from the grocer, and have almost forgotten that their ancestors baked and worked in their cheeseries.

There is the old proverb, "To believe that the moon is made of green cheese," but although one has a general idea of its meaning it is unlikely that many know exactly what green cheese is. It is not called green, says Boorde,[21] "by the reason of colour, but for the newnes of it, for the whey is not halfe pressed out of it." There were four cheeses in those days, green, soft, hard, and spermyse, whatever the last named may have been. Then, again, the well-known saying, "as like as chalk to cheese" (meaning, of course, that it is unlike) loses its point, if we think of some of the modern fancy cheeses. Still, we have a fair notion of what Tom Hood meant when he sang of Miss Kilmansegg's adulators, "Flatterers make cream cheese of chalk, they praised—how they praised—her very small talk, as if it fell from a Solon."

[13] Wright, *English Dialect Dict.*, vol. v, p. 236.
[14] Burton, *Anat.*, Pt. ii, sect. iii, Mem. 3.
[15] Juvenal, *Satires*, x, l, 80.
[16] Tommaseo, quoted by Lean, *Collect.*, i, p. 480
[17] Meurier, quoted by Lean, ibid.
[18] Moffet, T., *Healths Improvement*, p. 236, 1655.
[19] King, W. F. H., *Classical and Foreign Quotations*, p. 75, 1889.
[20] Lean, *Collectanea*, vol. i, p. 502, 1902.
[21] Boorde, *Dyetary*, xiii, 266, 1542.

Addison, in the *Spectator*,[22] has some very interesting remarks upon antipathies, and cites cheese as one of the things which some people cannot abide. Some of these persons, he wrote, "offered to our consideration the miraculous Powers which the Effluviums of Cheese have over Bodies whose Pores are disposed to receive them in a noxious Manner; others gave an account of such who could indeed bear the Sight of Cheese, but not the Taste; for which they brought a Reason from the Milk of their Nurses." In this connexion one wonders how much the threats launched against us in our childhood's days have to do with the antipathies of later years; many of us still remember the vague sense of something terrible happening if we ate too much cheese. There is an Italian proverb,[23] too, which carries a terrible warning to the child who eats cheese or too much of it: *Il caccio fa romperle scarpette e ingrossar la lingua*. Certainly it is very alarming to think of any foodstuff bursting our shoes and making the tongue swell up! Perhaps this is the origin of the saying which the writer remembers being discharged at him when he was a boy and a lover of cheese, "You may eat cheese and choke."

We must bring these rambling remarks on bread and cheese proverbs to an end with two adages which illustrate once more the two views of cheese—that it is good, and that it is bad unless taken in great moderation; the one is, "You may eat bread and cheese till you become hungry again," and the other is, "A pennyworth of cheese is enough."

Before, however, we leave the subject altogether, let us hear Dr. Thomas Moffet;[24] we have taken his views upon bread; what has he to say about cheese?

> Now if the Butter be at Market when the Curds or Cheese is prest at home, then are they both utterly unwholsom, clamming the stomack, stopping the veins and passages, speedily breeding the stone, and many mischiefs; but if they be equally mingled with the butterish part, then the Cheese made thereof is wholsom, unless age or ill-housewifery hath made it bad: For new, sweet, and fresh Cheese nourisheth plentifully; middle-aged Cheese nourisheth strongly, but old and dry Cheese hurteth dangerously: for it stayeth siege, stoppeth the Liver, engendereth choler, melancholy, and the stone, lieth long in the stomack undigested, procureth thirst, making a stinking breath, and a scurvy skin: . . . But was not that a great Cheese think you, wherewith Zoroaster lived in the Wilderness twenty years together, without any other meat? or rather was it not most cunningly made or preserved, when at twenty years end it did eat as soft as at the first day? Which though some do think impossible, yet the Parmisan of Italy will prove it true, by age waxing mellower and softer, and more pleasant of taste, digesting whatsoever went before it, yet it self not heavy of digestion. Our Essex Cheese, being well handled, would in my judgement come next unto it. . . . The Irishmen, like to Plinies Barbarians, have not yet so much wit as to make Cheese of Milk; and our Welshmen want cunning to make it well. French Cheese in Plinies time tasted like a medicine; but now the Angelots of Normandy are counted restorative; which many of our Gentlewomen (and especially a Niece of mine own) have so well counterfeited, that they excell their first pattern. Spain hath forgotten the art of Cheese making; and Portugal makes them but indifferently well, though sometimes the best in the world were made at Cuna, near to Cape Vincent. . . . As for our Country Cheeses, Banbury and Cheshire yields the most, and are best; to which the Holland Cheeses might be justly compared, if their makers could but soberly put in salt.

There was published in 1599, by a certain Henry Buttes, a book called *Dyets Dry Dinner*, in which a good deal was put forward in praise of tobacco; but the author had something to say about cheese as well as the "weed nicotian." Here it is: "They that have best leisure, and love cheese best I would wish them to write an Apology in defence of the common dislike thereof why so many love it not." But these remarks are growing wearisome, and the writer must desist, lest the reader say to him, as Sir Hugh Evans[25] said to Simple: "I pray you, be gone: I will make an end of my dinner; there's pippins and cheese to come."

[22] *Spectator*, No. 538, Nov. 17, 1712.
[23] Lean, *Collectanea*, i, p. 501, 1902.
[24] Moffet, T., *Healths Improvement*, pp. 131-133, 1655.
[25] Shakespeare, *Merry Wives of Windsor*, Act. i, Sc. ii, 11-13.

UNDER the will of the late Miss Helen Margaret Greswell of Oxford, the Radcliffe Infirmary receives a bequest of £1,000.

THE FUTILITY OF THE CORONER'S INQUEST.

THE discussion of Dr. Brend's paper, entitled "The Futility of the Coroner's Inquest" (BRITISH MEDICAL JOURNAL, May 3rd, p. 940), was resumed at the meeting of the Medico-Legal Society on May 20th.

Sir FREDERIC HEWITT said that he had intended to speak on the subject from the point of view of one who was interested in the use of anaesthetics, but he was so much impressed with Dr. Brend's paper that he desired to extend the scope of his remarks. He regarded that paper as a most valuable contribution to the subject, and there was no doubt it made out a strong case for reform. The verdict of the coroner's jury sometimes contained some valuable information, but generally it was quite useless. In most cases in which inquests were held there was much unnecessary mental suffering entailed, without any adequate return from the public point of view. After vacillating for some years, he had come to the conclusion that inquests were of no use in relation to deaths under anaesthetics. In collaboration with a London coroner who also took a particular interest in this subject, he had prepared a series of questions to be administered to medical practitioners at inquests of this character, but even the statistics so obtained were wholly useless. The time had in his (Sir Frederic's) judgement arrived when some action should be taken. He agreed with Dr. Brend's proposals. To have a medical inquiry in the first instance would enable most valuable statistics to be compiled.

Mr. G. C. GARDINER said that the chief charge Dr. Brend appeared to make against the present system was that deaths frequently formed the subject of a dual inquiry, but that was no real objection. Inquests were of more importance now than they were in days gone by. Many inquests had to do with death by accidents. Liability for the accident was not the question. Recently the Home Office had instructed its solicitors to appear and report at every inquest relating to a motor accident. The chief object, therefore, of these somewhat informal inquiries was not to settle who must pay damages but how could such accidents be prevented in future. It had been stated by Dr. Brend that coroners' verdicts were ignored by insurance companies, but many cases never reached the courts. The information elicited at inquests was frequently made use of by the insurance companies. As to medical evidence, he advocated an autopsy by an independent medical man, preferably a public official, and suggested that the medical evidence should be that of independent persons. As to the proposed reforms, it was already difficult to obtain medical certificates. How much more difficult would it be to get the practitioner in a poor district to give evidence which would have the effect of preventing a poor widow getting compensation! Personally he would be inclined to enlarge and not restrict the function of the coroner's jury.

Dr. J. SCOTT said that a strong case had been made out for altering the functions of the coroner. Speaking as one who had had considerable experience at the Old Bailey, he was far from saying that inquests were useless. In the Central Criminal Court he found the coroner's depositions very valuable, especially when he was inquiring into the state of mind of a prisoner. The coroner could call the prisoner's wife as a witness, while a court of law could not. On the whole he thought that the second of Dr. Brend's proposals was the better. He had not had much experience of Scottish inquiries, but agreed with Dr. Brend that there was very little disadvantage in having the private inquiry.

Mr. A. M. FOOKS said that public inquiries were essential. A large percentage of the inquests held concerned the poorer classes of the community. From their point of view publicity was of vital importance by discovery of suspicious circumstances and preventing abuses. The English system was preferable to the Scottish. It was only by accident that the Ardlamont mystery was revealed in Scotland. Had the case arisen in England it would have been discovered at once in the ordinary course. Although his experience as a coroner had not been very long, he had noticed an improvement in the treatment of children, and he believed it was largely due to the influence

of the coroner's inquest in giving publicity to dangerous methods of treating children. Dr. Brend had said that "criminal courts are nearly always guided by the magistrate's decision." Only a fortnight before he had a case in which the inquest showed conclusively that the shot which caused death was accidental. The person who had fired the gun was before the magistrate, and as a result of the inquest the prisoner was at once discharged. The question usually raised at an inquest was such as was best decided by a jury. He had often felt grateful to a member of the jury who evinced special knowledge of the building or some other trade.

Dr. MORGAN FINUCANE said he entirely disagreed with Dr. Brend. What was necessary was the attachment of a specialist to each court. In the early days the coroner was a high judicial officer. The coroner's function was performed untrammelled by the laws of evidence. He and his jury had to inquire "to the best of their skill and knowledge." In compensation cases he fully appreciated the enormous advantage of having an independent pathological examination. He regarded the coroner's court as a progressive institution, although he admitted that the procedure might be improved.

Mr. HERBERT SMITH, LL.D., said that his experience at the Bar led him to desire the abolition of coroners' courts. Only recently he had appeared at an inquest at which his client was found guilty of gross negligence without his advocate having had the right to address the court. Such a verdict might give rise to expensive litigation. In criminal courts, if the grand jury threw out the bill, and counsel attempted to proceed on the coroner's inquisition, what would the judge say to him? Coroners' courts did not attend to the rules of evidence, but if the verdicts returned were to be judicially recognized the inquiry should be conducted judicially.

Earl RUSSELL, whose remarks concluded the discussion, said that sufficient weight had not been attached to Dr. Brend's statistics, but he could not agree with Dr. Brend's conclusions. The object of the coroner's inquiry was to allay public apprehension. It also served to fix liability upon some one. If a mere legal inquiry was begun at once there would be no "fishing" inquiry, and that would be a disadvantage. The suggested scientific inquiry was a counsel of perfection from the point of view of the general public, which looked to the coroner to make sure that a number of undetected murders did not occur. Another advantage was that at an inquest a man was put on oath soon after the event. In his view Dr. Brend had been led astray by a desire to formulate a scientific system.

Dr. BREND, in reply, said that those who had criticized his observations had founded themselves upon experience of London coroners. It should not be forgotten that country coroners' inquests were often conducted in a slipshod manner. Only a medical man could properly understand medical terms. In translating his evidence into simple English, which was necessary if the coroner was a layman, the medical witness was bound to lose some of his accuracy. The complaint that no coroner appeared to have any principle on which to go in deciding whether to hold an inquest or not had not been met. He regarded the suggestion that an expert pathologist should be present as an admission that the present system was defective.

UNDER the will of the late Mr. Isaac Danson of Boston the General Hospital, Birmingham, receives a bequest of £1,250 for the endowment of a bed in memory of the testator and of his sister, Jane Danson.

AN attempt is to be made to determine the standard of physical development of the normal American child. It was announced on April 28th that the New York Milk Committee, with the help of a number of recognized experts from different States of the Union, have undertaken the task. For the purposes of the investigation a series of competitive examinations of normally healthy children will be held in county, city, and State contests. One hundred thousand children will be scientifically tested and measured, and the weight, height, physical measurements, condition, and mental development will be entered on cards furnished by the committee. Prizes will be given to encourage the mothers, who will also be afforded opportunities of instruction in the art of rearing children. It is hoped that by these investigations the standard of the normal healthy American child will be established beyond dispute.

LITERARY NOTES.

MESSRS. OLIPHANT, ANDERSON, AND FERRIER announce a volume on the late Dr. Joseph Bell. The identification in the public mind of the well-known Edinburgh surgeon with Sir Arthur Conan Doyle's "Sherlock Holmes" has, since Dr. Bell's death, given more and more weight to the mistaken presentation of a good man's personality. A volume of reminiscences written by an old friend of Dr. Joseph Bell will, it is stated, "show his absolute unlikeness, save in one respect, to Conan Doyle's masterpiece."

Advantage is to be taken of the occasion of the opening of a new hospital at Toronto to publish an account of the General Hospital of Toronto. That institution was, according to the *Canadian Practitioner*, established by means of funds supplied by the Loyal and Patriotic Society in 1812. The medals struck for the heroes of the war of 1812 were never issued, but were melted down, the bullion sold, and the proceeds handed to the hospital. A complete history of the hospital will be published for the first time, and it is expected that it will form an interesting contribution to Canadian history as well as to hospital literature.

The Cambridge University Press will shortly publish Mr. F. Kingdon Ward's record of his experiences and observations when engaged in plant collecting in Western China and South-Eastern Tibet during the year 1911. The book, which is entitled *The Land of the Blue Poppy*, is not one for botanists only; the author has many interesting tales to tell of the Tibetan people, amongst whom he often played the part of medicine-man, receiving presents of milk and eggs as his fee. A number of maps at the end of the book show the exact districts—some of them not visited before by white men—covered by Mr. Ward in his travels; the book will contain also forty photographs taken by the author. The book is dedicated to the memory of the author's father, Professor H. Marshall Ward.

The W. B. Saunders Company, of Philadelphia and London, has in active preparation a work on the *History of Medicine*, by Dr. Fielding H. Garrison, Principal Assistant Librarian, Surgeon-General's Office, and editor of the *Index Medicus*. The book, which will be in one volume, will give a concise account of the evolution of the healing art from primitive times, the story being carried on through Egyptian, Sumerian, and Oriental medicine, Greek medicine, the Byzantine period, the Mohammedan and Jewish periods, the mediaeval period, the period of the Renaissance, the revival of learning and the Reformation. Then the history of modern medicine is related—the seventeenth century ("the age of individual scientific endeavour"), the eighteenth century ("the age of theories and systems"), the nineteenth century ("the beginning of the organized advancement of science"), and the twentieth century ("the beginning of organized preventive medicine") being successively passed in review. The account of each period will be followed by a brief survey of its social and cultural phases. There will also be appendices covering the medical chronology, the histories of important diseases, the histories of drugs and therapeutic procedures, and the histories of important surgical operations, with bibliographical notes for collateral reading. The book will be illustrated.

"Alba," writing in the *Aberdeen Weekly Journal* of May 9th, says that Dr. John Brown's *Horae Subsecivae* had been anticipated, so far as the title is concerned, by another Edinburgh physician, Dr. John Fletcher, lecturer in physiology and medical jurisprudence in the Argyle Square School of Medicine. The book was published in 1833 by John Carfrae and Son, 62, South Bridge, Edinburgh, and was entitled *Horae Subsecivae; or First Steps to Composing and Conversation on Medical Subjects in Latin Language*. Dr. Fletcher died in 1834, and there is a tablet to his memory in St. John's Episcopal graveyard, Edinburgh. After Dr. Fletcher's death a posthumous work of his entitled *Rudiments of Physiology, or a General Treatise on Organism and Life*, was published in 1835. In some of the reviews of the book Fletcher was

described as the most original thinker and writer on medical subjects of his day. John Brown was then a young medical student, and probably attended Fletcher's prelections, but beyond the title, there was no likeness whatever between the two books. Duport published *Musae Subsecivae* some 200 years before, and Paley his *Horae Paulinae* in 1790; but Latin titles to English books have deservedly fallen into disuse now. The Americans, in their reprint of Dr. Brown's book, translated the title and called the book *Leisure Hours*.

Dr. W. L. Storey (Belfast) writes: Dealing with Latin misquotations, you very pungently observed, in "Literary Notes" in the JOURNAL of April 26th:

> That Latin as written by many journalists and authors is a dead language is sufficiently shown by the corrupt fragments so freely strewn about certain kinds of current literature.

But what about our own language? Specimens of the English tongue have been handed down to us in original bottles, but many of the present-day writers and speakers refuse to dispense them until they have altered them by additions of their own. The result is that the full effect of the original is lost, and a malodorous composition foisted on the public, "though every nare olfact it not." Shakespeare, perhaps, suffers more from sophistication than any other great original. Take a few samples: "The ills that flesh is heir to," "Screw your courage to the sticking point," "Make assurance doubly sure," "Such stuff as dreams are made of," "There is a Providence that shapes our ends," "The sere and yellow leaf." Milton, too, has been adulterated—for example, "Fresh fields and pastures new," "That last infirmity of noble minds." Cowper's generous hospitality has been reduced to "The cup that cheers," while Keble's duties have been altered to "The common round, the daily task." Possibly one of the most generally accepted substitutes is "A little knowledge is a dangerous thing." The Bible itself has not been left alone by our dispensers. We are assured that the British workman earns his bread by the sweat of his brow, as did Adam. But is this the exact wording of Adam's curse? "There is nothing new under the sun," except the surprise some people will experience if they refuse that imitation and insist on having Solomon in the original. Was it some facetious K.C. or Q.C. who first told us that "in the multitude of counsellors there is wisdom"? An unsuccessful litigant will not subscribe to this declaration. Indeed, he will find it difficult to accept the statement even in the original.

Readers of *Pickwick* will remember that Mr. Robert Sawyer refused the offer of a head for dissection on the ground that he could not afford expensive luxuries. In resurrection days prices of bodies ruled high, but we were told by a distinguished professor of anatomy who had been a student during that period that the cost to students was not appreciably higher than it is now, the school paying the difference. In an article in the February number of *Aesculape* Dr. Marcel Fosseyeux, of the Paris Assistance Publique, who has access to the archives of the Assistance Publique and the manuscripts in libraries relating to old Paris, gives a number of facts as to the price of bodies in the seventeenth and eighteenth centuries. In a memoir presented to the Académie des Sciences in 1785 by Tenon on the hindrances to the progress of anatomy one of the principal of these is said to be the difficulty of getting bodies for dissection. To remedy this drawback he proposed to establish dissecting rooms communicating with the mortuary of the Hôtel-Dieu, so as to avoid the exhumation and transport of bodies. He estimated at 500 the number of subjects necessary for the instruction of students at that day, and putting the price of each body at 6 francs he said a sum of 3,000 livres a year would have been available for the payment of the hospital attendants whose duty it was to take the remains to the cemetery after dissection, or in case of need for prayers for the repose of the souls of the original owners of these fragments of humanity. Two kinds of persons supplied bodies to anatomists for anatomical purposes—students who wanted them for their own use, and men who looked for profit from a dangerous trade. Often it was necessary that the students should co-operate with the resurrection men in order to direct them and prevent scandals which these men, almost always drunken, were only too apt to cause. Frequent complaints were addressed to the office of the Hôtel-Dieu by people living in the neighbourhood of the Clamart Cemetery, whose rest was disturbed by the raising of bodies at night. This was not the only subject of complaint. It was not always easy to get rid of the remains. Some cremated the bones, then the neighbours complained of the foul-smelling smoke; the soft parts were thrown into privies, making these even more horribly insanitary than they always were; or into the Seine. Fragments stopped by rafts or boats caused terror among the people always ready to suspect crimes. In the archives of the Bastille are recorded the doings of a student of the Charité who, accompanied by a porter and six soldiers, used to break after midnight into the cemetery of Saint Sulpice, where he raised bodies and took them away in a coach. He gave 10 francs to each of his assistants, and the price at which he sold the bodies was on an average 150 francs. In the seventeenth century there is evidence that bodies cost 40, 80, and even 100 livres. Sometimes the price went up to 250 francs. For dissections students paid 40 sous the first year, 20 the second, 10 the third. After that no further payment was required. A Bachelor of Medicine, elected every year, and known as the "archdeacon," was charged with the duty of getting hold of the bodies of people who had been executed and of having them buried after the demonstrations and dissections. There was often much unseemly haggling over these bodies, although the charges to be paid had been fixed by Parliament in 1632. The law was invoked, but the "archdeacon" often paid what was demanded so as to fulfil his contract.

The fourth annual *Year Book of the Viking Society for Northern Research*, recently published, contains a full account of the proceedings of the society during the year 1911–1912. Many interesting discoveries that throw light upon domestic life and customs during the Viking period are here described; one of them reveals the ingredients used by the cooks of that period in the making of their household bread. Under the heading "Notes and Queries" we read that "Dr. Schnittger, professor at Stockholm University, has made an interesting find relating to the remote past of his country at Ljunga, in Eastern Gothland—namely, some bread dating from the time of the Vikings. Microscopical examination has shown this bread to be made from pine bark and pea meal, thus proving that peas were grown in Sweden as far back as a thousand years ago." It seems to prove also that their staple article of diet must have been a fruitful source of appendicitis to the hardy Norsemen, or else that they were blessed with better teeth and stronger digestions than their more weakly descendants. The Ljunga loaf is not the only specimen of ancient bread exhumed by Dr. Schnittger, who, in the course of the excavation of Boberg Castle five years ago, dug up a loaf dating from the fourth century of the Christian era. With these two exceptions, however, few finds of this kind have been made in Northern Europe, though several prehistoric loaves have been discovered from time to time in the Swiss lake dwellings and in Egypt. The contents of the *Year Book* also includes some excellent reviews of current literature, and a short account by Dr. Haakon Schetelig of Captain Hj. Negaard's recent discovery of a number of stone huts in the mountains of Western Norway. These huts, which belong to the Stone Age, are said to have been the dwelling-places of a prehistoric race of hunters, who inhabited the lonely plateau in the mountains between Hardanger and Hallingdal, and whose only means of supporting life must have been the reindeer still found in considerable numbers in certain parts of Norway.

Sir James Paget, in an introductory address delivered at St. Bartholomew's Hospital in October, 1863 (*Memoirs and Letters*, edited by Stephen Paget), warned his hearers that they must be prepared for the apparent success of dishonesty. He added:

> In our department of social life, as in all others, the supply of rogues is duly proportioned to that of fools. For the most part medical dishonesty is but the complement of non-medical folly. Therefore until there is a widespread teaching of natural science there probably will always be much success in quackery.

We are glad to find so strong a confirmation of what we have always insisted upon—that the only cure for quackery is the education of the public. This will, as Lecky said, create an atmosphere in which superstition and credulity cannot live.

British Medical Journal.

SATURDAY, MAY 24TH, 1913.

THE FRIENDLY SOCIETIES' CONFERENCES AND THE MEDICAL PROFESSION.

THE members of the medical profession are apparently not the only people concerned with the National Insurance Act who have a difficulty in acquiring a taste for its "rare and refreshing fruit." The friendly societies, judging from the reports of their Whitsuntide conferences, are succeeding in at least dissembling their enjoyment very creditably. We can quite understand their feelings of soreness. When the bill was first talked about, it was understood that the friendly societies were practically to have a monopoly. Their representatives went about with advance drafts of the bill in their pockets and a smile of great contentment on their faces, but during the progress of the bill a change came over the scene. The friendly societies found that the collecting and industrial societies, with no claim based on past history, but by superior commercial ability and influence, had managed to secure a very handsome share in the administration of the Act. Moreover, since the beginning of the operation of the Act duties have been imposed on the friendly society officials to which they were little accustomed, and which must have proved a source of much irritation. We can therefore quite understand that the societies met this Whitsuntide in a somewhat resentful spirit and prepared to vent their resentment on somebody. The Chancellor of the Exchequer, of course, was the subject of some bitter reflections, and the Commissioners were told, more in anger than sorrow, that they knew nothing about the business they are supposed to administer.

Mr. Lewis, of the Hearts of Oak, with the most engaging candour, indicated that the Commissioners required careful watching by a "lively, keen body of men," of which we presume Mr. Lewis might be induced to become one. He also gave hints, by no means obscure, to Sir Robert Morant that the eyes of the Hearts of Oak were upon him, and that unless that gentleman mended his ways he would soon get his marching orders. We trust that Sir Robert will give this warning such attention as it may deserve. Mr. Lewis wound up by expressing the opinion that the Government had made a mistake in not giving the administration of medical benefit to the approved societies, as they could have done it much better and more cheaply than the Insurance Committees. Mr. Lewis is, however, prepared to give the Government another chance of doing the proper thing in the forthcoming amending Act.

Probably it has not occurred to the gentlemen who made speeches of this kind at the various conferences, nor to those who applauded them, that any desire they may conceive the medical profession to have had to see medical benefit administered by the friendly societies—and of any such desire we have found no evidence—is not likely to be increased by these petty exhibitions of meanness and wrath at the loss of opportunities of patronage which have escaped the friendly societies, for ever. How much cheaper would the societies like to make medical attendance for the insured person? He pays four-ninths of the original 6s. estimated for medical benefit, the rest of the 6s. being found by the employer and by the State, and an extra 2s. 6d. by a special State grant. That is to say, the insured person himself pays 2s. 8d. per annum for his medical attendance, medicines and appliances, as against an average cost to himself in days before the Act of 4s. per annum if he were a member of a friendly society, and probably more if he were a private patient. The less the representatives of the friendly societies say about the cost of medical attendance the better, considering their own record in the way of sweated rates against which the Association has so long and so successfully protested. But it is really not so much the cost of medical attendance which is worrying the friendly society official, though doubtless he thinks some of the money which now goes to the doctor might well have been spent in some other way—the encouragement of the hard-worked friendly society official, for example. The real thorn in the flesh is the fact that the friendly societies have lost their control over the profession. No longer is it possible for a doctor who does not "keep in with" the officials of a lodge to find that by means of the clumsy wire-pulling of a little coterie he is to lose at one swoop the whole body of club members. The contract practice doctor has regained his freedom to an extent which can never be understood by those members of the profession whose first experience of contract medical work has been gained in the insurance service. There are irksome restrictions inherent in all contract practice, but, thanks to the work of the Association, these have been greatly reduced under the Act compared with what they were in friendly society club work. If a medical man unwittingly offends a person on his insurance list, the trouble only entails the loss of that person, and perhaps a few of his immediate relatives, just as would happen in private practice, whereas in the old days it might have meant the loss of the whole membership of a club numbering hundreds. If a complaint were made against a friendly society doctor, he might or might not have an opportunity of meeting it; but the final decision on which his tenancy of the appointment rested lay with a body of laymen without any admixture of his professional peers. We say this, not as loving Insurance Committee control more but as loving friendly society control less—a lesson taught by long and bitter experience. It is not that the friendly societies did not know all this, but when they had it in their power to remove many of the grievances of those members of the medical profession who served them, they refused; yet they appeared to be surprised when the profession declared with one voice for Insurance Committee control, for any control in fact, rather than that of the friendly societies.

The efforts of Mr. A. H. Warren at the conference of the Manchester Unity of Oddfellows at Scarborough excite special admiration. He was in fine form, and made what is described in the *Yorkshire Post* as a "slashing onslaught on the medical profession." He complained bitterly of the House of Commons, who with only seventeen exceptions agreed to hand over the administration of medical

benefit to the Insurance Committees, and said this administration was now less satisfactory and less efficient than at any previous time. Warming to his subject, he said, "deliberately," that in the eyes of the friendly societies the doctors had played a most despicable part, and when the history of the British Medical Association on this question came to be written it would not be regarded as a credit to a great and honourable profession. The line taken by the profession was quite unaffected by any praise or blame it might receive from the friendly societies, and when Mr. Warren went on, as he did, to accuse the doctors of not playing the game fairly, of treating their insurance patients like paupers, of taking their money but not being willing to work for it, he overreached himself. Where is the evidence that the insured persons are not receiving proper treatment? If any such instances are produced we shall be the last to defend such lapses. If any one is in a position to hear of these abuses it should be the various bodies of Insurance Commissioners. We challenge Mr. Warren to apply to those bodies for the production of any cases justifying the statement he makes and to lay them before the public. The fact is Mr. Warren and his fellows cannot rid themselves of the obsession that insured persons are unable to look after their own interests but need the protection of the friendly societies. When will they learn that free choice of doctor gives the insured person all the protection he needs, and in fact places him on the level of the duke whose only protection is that if he is not satisfied with the attention he receives he can change his doctor? So can the insured person, and we venture to say that any abuses of the nature mentioned by Mr. Warren, if they exist at all, will be righted by the full play of the principle of free choice of doctor. That is the safeguard of the insured person, and not anything which the Manchester Unity can do for him. We would, however, remind Mr. Warren that accusations of not playing the game come with a singularly bad grace from one who was a party to the bargain made by the friendly societies with the Association that the aged and infirm members of those societies should be attended at the same rate as is charged for insured persons. Mr. Warren was present at the conferences, and there is no doubt that he was one of those who thought they had done a good stroke of business when they got the bargain embodied in the Act; yet he has been prominent amongst those who have tried ever since to evade the friendly societies' side of the bargain. The profession has not sunk so low that it needs to take its lessons on "playing the game" from persons who act in this way. Mr. Warren wound up by moving "that in the opinion of this Annual Conference the National Insurance Act should be so amended as to restore to approved societies the right to administer medical benefits under the Act." This resolution was, of course, carried unanimously. We know how the Association convinced the Chancellor of the Exchequer that friendly society control of medical benefit had been a bad thing in the past, and would damn his bill if persisted in. We know how the House of Commons almost unanimously endorsed that opinion, and we have little fear of the result if the question is again raised, but the transfer is in our opinion already outside the range of practical politics. As to the action of the medical profession we have no doubt. Whatever differences of opinion there may be in the profession in regard to other points in connexion with the Act, there are absolutely none in regard to this, and we can confidently assert that there would be no difficulty in bringing about an almost complete breakdown of the medical benefits of the Act if the Government were so misguided as to trust their administration to the approved societies. The profession has had a long experience of that kind of refreshing fruit, and its motto is, "Never again."

THE PLACE OF HYGIENE IN TREATMENT.

The old time apothecary, whose extinction has recently been deplored by Lord Rosebery, was an example of a system which tended to foster overconfidence in the efficacy of drugs. Medical counsel was an imponderable to which no value was attached unless it was expressed in the concrete form of pills and potions; charges for medicines were recoverable at law, but professional advice had no place in the apothecary's account. Sir William Gull considered it one of the best achievements of his life that he with Sir William Jenner disabused the public mind of the notion that drugs were the beginning and end of medical treatment. We remember his saying publicly that during the whole time of the severe attack of typhoid which nearly robbed the nation of the future Edward VII, not a single dose of any medicine whatever had been given. His prescriptions were habitually of extreme simplicity, and he once said that if every drug in the world were abolished a physician would still be a useful member of society.

How far the medical mind has travelled on this path is shown by an address recently delivered by Dr. C. Mongour, Professor of Therapeutics at Bordeaux.[1] He says that the importance of drugs has diminished as the applications of physiotherapy have developed. Our notions of therapeutics now depend on the nature and evolution of diseases, and on the natural means of defence which the organism possesses. Acute maladies which run a definite course—measles, scarlatina, typhoid fever, bronchitis, pneumonia, erysipelas, and so forth—have a natural tendency to spontaneous cure. Even tuberculosis, when it takes an acute pneumonic or broncho-pneumonic form, tends, he maintains, to get well. He suggests that this may, perhaps, explain why specific drugs appear more efficacious in acute than in subacute or chronic forms of tuberculosis. He asks why we make war on the symptoms which constitute the normal manifestation of an infection. His answer is, Because we are still under the sway of the old notion that every morbid reaction is an evil which must be suppressed forthwith as an exciting cause of organic lesions. But, he points out, the symptoms may be factors in the curative process. For instance, in typhoid fever the pyrexia, he thinks, hastens the destruction of morbid germs; the temporary constipation, by immobilizing the intestines, lessens the risk of perforation; and the want of appetite prevents overloading with undigested material. He adds his testimony to that of those who insist on the harmful influences of antipyretics, purgatives, and aperients, used as matters of routine in the treatment of acute affections. In many cases even of such affections as acute diseases of the liver, of the biliary passages and the kidney, ulcer of the stomach, and

[1] *Province médicale*, 1912.

appendicitis, there is a natural tendency to cure. His doctrine is that the physician must respect the natural means of defence in the organism, and that, in short, the true scientific attitude is, to use a phrase erroneously attributed to the late Lord Salisbury, "animated expectancy." But to maintain this attitude judiciously one must know well the normal course of diseases, and how to distinguish a regular from an abnormal morbid reaction. Professor Mongour denies that he is a nihilist in therapeutics, and admits the difficulty of the position of the doctor, who is credited by patients and those about them with the power of curing disease by means of drugs. He is expected to "do something." This conviction, says Professor Mongour, must be respected, and he recognizes that at certain times and for special reasons antipyretics, analgesics, and hypnotics are often necessary.

He complains of the neglect of the expectant method. Whereas the hour for a draught or a cachet is not often forgotten, it is exceptional for friends to obey the directions as to feeding strictly, to attend rigidly to the hygiene of the sick chamber, to take the temperature regularly, and to collect the whole of the urine that is passed. In these things the doctor often meets with an indifference or a covert opposition which discourages him. His drug treatment may not be discussed, but the family will criticize his hygienic directions, and if anything goes wrong it is that part of the treatment which will be blamed. Chronic diseases have no tendency to spontaneous and definite cure, but they have periods of rest in their evolution, provisional cures which can be prolonged by opportune intervention, and this often, of course, consists in advising hygienic measures.

His address is not a depreciation of drugs, but a plea for still greater reliance on hygiene and physiotherapy. Diet, which is only one form of this, is, he says, neglected in the treatment of chronic disease, because we have not yet acquired the habit of methodically and regularly testing the functional capacity of the different organs by means of the procedures which the clinical laboratory places in our hands. But functional testing thoroughly carried out means an expenditure of time the patient is not disposed to compensate and the expenditure of efforts which he does not appreciate. It is extremely difficult, too, to get a regimen adhered to, and often, owing to social or personal conditions, it is practically impossible to expect it to be carried out; in such a case its severity must be mitigated.

We take it that professional opinion is largely agreed that over-drugging is a bad thing, but it is quite easy to go to the other extreme. Some of the distrust of drugs is to be traced to the employment of preparations of uncertain stability or inferior quality. At the same time, it will not be denied that what may be called the hygiene of disease is too much neglected by the public, owing to the persistence of prejudices which are not easy to overcome. Most patients of all classes are not quite satisfied unless they get a prescription. Man seems to have a craving for medicine. Sir William Osler says: "Heroic dosing for several generations has given his tissues a thirst for drugs. As I once before remarked, the desire to take medicine is one feature which distinguishes man the animal from his fellow-creatures. It is really one of the most serious difficulties with which we have to contend. Even in minor ailments which would yield to dieting or to simple home remedies, the doctor's visit is not thought to be complete without the prescription." Patients expect it, even those among them who scoff most at physic and boast that they throw their medicine out of window. Why in such cases they should go to the expense of buying it is one of those contradictions in human nature which we must leave the psychologists to explain. But although that kind of polypharmacy which gave rise to the "small-shot prescription" is dying a natural death among doctors, there are still a good many who have a remedy for every symptom. Practitioners of this class are particularly ready to prescribe new remedies with names of "learned length and thundering sound." Hardly has a new synthetic product made its first bow to the public than they hasten to use it. They order it indiscriminately, till, more or less quickly, the truth is forced upon them—first, that there are disadvantages attending the use of the new elixir; next, that its benefit is doubtful; lastly, that it is useless. It is this eternal cycle that led Broussais to tell a patient to make haste to take a certain medicine while it was still in the curative stage, *Hâtez vous de prendre ce remède pendant qu'il guérit.*

Of course the opposite course is equally to be avoided; doing too little is, perhaps, worse than doing too much. Expectant treatment must not lend itself to the application of the line:

Rusticus expectat dum defluat amnis.

Our aim must be to make diagnosis more and more accurate, and by experimental research to discover remedies and the means of applying them with accuracy so that they shall produce the exact effect that is wanted. In a word, our pharmacopoeia should be an armoury of weapons of precision, used with the knowledge gained by clinical observation made surer by the growth of physiology and pathology. In this way, and in this way alone, can therapeutics strengthen its position as a science.

AN ACTUARIAL STUDY OF SANATORIUM STATISTICS.

AT the present time work throwing light upon the value of the sanatorium method in the treatment of pulmonary tuberculosis is of peculiar importance, and a recent paper of Messrs. Elderton and Perry[1] is of interest in this connexion. The writers, who are professional actuaries, have been provided with data from several sanatoriums, the principal series being derived from the records of Dr. Lawrason Brown at Adirondack, and from material extracted from the case-books of the late Dr. Austin Flint relating to phthisical patients seen between 1845 and 1870. The authors analysed the records in the following way. A certain life table (The English Life Table, No. 6) was used as the standard, and the data were tabulated into a number of groups, regard being had to sex, age, and number of years under observation. A comparison was then instituted between the number of deaths observed and the number to be expected on the basis of the life table used. The subdivisions employed in the case of the Adirondack records were as follows: Three sets of one thousand each were taken; the first comprised patients admitted between 1885 and 1897; the second fell between 1897 and 1904; and the third comprised admissions from

[1] *Drapers' Company Research Memoirs; a Fourth Study of the Statistics of Pulmonary Tuberculosis; the Mortality of the Tuberculous; Sanatorium and Tuberculin Treatment.* Based on (1) Dr. Lawrason Brown's Adirondack Sanatorium Data; (2) Data from two Scottish Sanatoriums; (3) Dr. Austin Flint's Data from Presanatorium Days. By W. Palin Elderton, F.I.A., and Sidney S. Perry, A.I.A. London: Dulau and Co. 1913. (Med. 4to; pp. 55. 3s. net.)

1903 to 1909. Each thousand was then subdivided into (1) incipient, (2) advanced, (3) far advanced cases. These groups correspond roughly, but not exactly, to Turban's three stages.

The authors find that in almost every group the rate of mortality diminished on passing from the first to the third thousand; thus the ratio of actual to expected deaths for incipient cases (females) was 2.7 for the first thousand, 2.5 for the second, and 1.0 for the third, the number of years at risk being reckoned from the date of admission to the sanatorium. For advanced cases the corresponding figures were 11.4, 10.7, and 7.9. For far advanced cases the rates were 50.3, 48.3, and 8.0, but the last ratio was based on a very small number of patients. The authors believe that a different selection of cases has had a good deal to do with the improved experience, that the incipient cases in the later experience may have been less advanced than the same group in the first thousand. Taking the last 2,250 cases admitted, the ratios for incipient, advanced, and far advanced cases were 3.6, 10.0, 36.8 for males, 2.3, 10.4, and 45.4 for females. Flint's patients, allotted as far as possible to the same clinical groups, gave 13.9, 18.4, and 106.0 for males and 9.1, 37.2, and 90.0 for females. There were, however, very few incipient cases in the Flint series, and, as the authors point out, a comparison between this and more recent experience is fraught with difficulties. Thus, to mention but one drawback, a modern English life table is perhaps hardly an appropriate standard of mortality even in the case of contemporary American lives, it is certainly inappropriate in the case of persons living some half a century ago, because the mortality at the ages principally involved has markedly diminished.

The writers have also applied their method to those cases in the third thousand from Adirondack which had been treated with "TBF" or "TBF Co" ("Broth Filtrate" and a mixture of "Broth Filtrate" and "Bacillary Emulsion"). The incipient cases so treated showed a slightly lower and the advanced cases a slightly higher mortality than those of the third thousand as a whole.

A comparison is also instituted between the mortality experiences of patients classified in other ways. It is found, for instance, that the mortality of patients with tubercle bacilli in the sputum was more than twice as heavy as that of patients whose sputum did not contain the bacillus, and that the mortality of those suffering from the disease was not heavier if their parents also had the disease. As the authors are careful to point out, this last result has no bearing on the question whether the offspring of phthisical parents are or are not more likely to develop the disease than the children of healthy persons.

The main conclusion which emerges from this patient inquiry is that we can hardly base a decided judgement as to the real value of modern methods of treatment upon existing data. The impression any reader derives from a perusal of Messrs. Elderton and Perry's memoir can hardly fail to be coloured by his personal predilections. Professor Karl Pearson, who contributes an introductory note, pleads for the expenditure of a "few thousand pounds on a more thorough study of the origins of phthisis and of the relative value of existing and alternative treatments." Most medical readers will be in sympathy with this plea, even if they have some misgivings as to whether the difficulties in the way of a compilation of adequate statistical data may not be greater than can be overcome even by the expenditure of many thousand pounds.

That a task is difficult is not, however, any reason for declining to undertake it, and it is satisfactory to observe from its final report that the Departmental Committee on Tuberculosis was alive to the importance of statistical research; its recommendations are now, we understand, receiving the careful consideration of the Government, and it is probable that an announcement as to the steps proposed to be taken will be made before very long. The scientific study of medical statistics has advanced by leaps and bounds in the last few years, and it is not too much to expect that before long a more satisfactory statistical stock-taking of our tuberculosis results will be practicable. When that time arrives, Messrs. Elderton and Perry's pioneer work will not pass without recognition, and in the meantime their suggestive paper will be useful both to the student and the general reader.

THE HOSPITAL CLINICAL UNIT.

Mr. Grey Turner has printed in a pamphlet an interesting address he gave last October as President of the Newcastle-on-Tyne Clinical Society. It is the outcome of the visit made to certain surgical clinics abroad by an informal club of British provincial surgeons, who, beginning with various centres in this country, have extended their range to Berne, Vienna, Paris, and some other places. The pamphlet, which has the title, *What English Surgery Needs*,[1] may be read with particular interest at the present moment by London teachers and old London students, for what Mr. Turner considers we need in this country is the highly organized and amply staffed clinic hospital unit which the Royal Commission on University Education in London has recommended as the proper basis for the medical faculty of the reformed University. The system has advantages and disadvantages, and if its adoption meant the abandonment of the English system of progressive appointments for students the loss would be greater than the gain to the student if not to the progress of medicine and surgery. But it need not mean this, as the Commissioners take care to point out. Mr. Turner gives most of his space to the clinics of Kocher in Berne and von Eiselsberg in Vienna. Of the needs of British surgery the two chief are, in Mr. Turner's opinion, first "recognition by performance"—that the universities, to get the best teaching in the clinical subjects, should go into the open market of all the men who speak the language, as they have already learnt to do in regard to professors of anatomy, physiology, and pathology. The second great need is adequate assistance—a graded staff to work with the professor and more or less under his guidance and his inspiration. Already we have moved some way in this direction. A surgeon and assistant surgeon if they work together, with a surgical registrar, house-surgeon, assistant house-surgeon, dressers, and clinical clerks, would form such a unit easily capable of expansion. The greater part of the staff exists and some at least of the material, but expansion and better organization are needed so as, in particular, to afford more time and greater facilities for the study of the problems of disease with all the assistance modern laboratories can provide, and to permit the utilization of the whole system for the education of the students in principles. The chief danger of the system of university clinical hospital units is that, unless effectively controlled by the governing body of the university, it may throw far too much power and patronage into the hands of a single dominating personality. This is not an imaginary danger, as the history of some great European centres sufficiently proves. There is the risk of crushing independence, and producing conditions which favour the

[1] *What British Surgery Needs.* Newcastle-on-Tyne: Easey and Best. 1913. Reprinted from the *North of England Clinical Journal.* (For private circulation.)

pliant rather than the original mind. We do not want to copy slavishly the German or Austrian, and still less perhaps the French system, but it seems clear that the growing complexity of medicine and surgery make it necessary that we should learn from them some of the lessons in organization they have to teach.

TUBERCULIN TESTS IN ANIMALS.

DURING the experimental work carried out by the Royal Commission on Tuberculosis many tuberculin tests were applied to a variety of animals, and the results systematically recorded. A carefully prepared summary of these has now been issued as a supplementary volume to the final report of the Commission.[1] It is believed that it will prove of value not only to the laboratory and farm investigator of tuberculosis, but, in view of the increasing employment therapeutically of tuberculins in the tuberculosis of human subjects, to the clinical physician also. The report has been written by Dr. L. Cobbett and Dr. Stanley Griffith, by whom, along with Dr. F. Griffith, the tests were made. In the preparation of the report Mr. Cyril Fox has given much assistance by making detailed analyses of the immense number of records. The first part of the report discusses the tests applied to the ox, pig, goat, horse, dog, cat, rabbit, fowl, and various species of apes and monkeys. In this, perhaps, the most interesting information given is as to the reliability of the tests as a proof of the presence or absence of tuberculosis. According to the standard of reaction adopted, 88.8 per cent. of the 250 tuberculous bovine animals tested reacted, while of 1,217 normal animals of the same species 0.4 per cent. only reacted. In the case of tuberculous pigs (53 animals) the percentage of reactions was the same as that obtained in the tuberculous ox, while among 136 tests on normal pigs no reactions occurred. Of the tuberculous goats (21 animals) no fewer than 95 per cent. reacted, while of 70 normal goats tested, 3 (4.3 per cent.) reacted, but 2 of the reactions occurred in kids, in which the temperature is notably unstable. Ten tuberculous horses only were tested and all reacted; 23 normal horses were tested and none reacted. These figures show that the tuberculin test, while not infallible, is nevertheless sufficiently constant in its action to afford a means of diagnosis of great practical value for the large domestic animals included in this first group. In tuberculous animals of the other species investigated the tuberculin test proved very inconstant in its action, especially in the case of the monkeys and apes. Of 32 tuberculous dogs 14 reacted, and of 11 tuberculous cats, 6. The results in rabbits and fowls were similar, and the general conclusion is that in this second group of animals the tuberculin test as employed is of little practical value. Stress is laid on the importance, when looking for a reaction, of taking the temperature sufficiently early and sufficiently often. In order not to miss in the ox and pig reactions which end unusually early, or begin unusually late, it is necessary to record temperatures every three hours from the sixth to the twenty-first hour after injection. In the goat it would seem to be permissible to begin at the ninth hour. The importance of taking the temperature often is due to the fact that the rise may be of very short duration, producing a "steeple curve." Since such steeples may reach their highest point as early as the sixth hour and as late as the twenty-first hour, it would seem advisable to take temperatures even at the third and twenty-fourth hours, in order that when a curve of this kind occurs records of the temperature before and after the maximum may be at hand to support it. In this way fallacies due to an error in a single observation would be avoided. Some experiments on the results of successive injections of tuberculin in tuberculous animals, chiefly bovine, were also made. They showed that for the most part tuberculous bovine animals might react more than once to tuberculin, even when the injections followed one another at intervals of a few days. Sometimes a second reaction might be even more marked than the first, though usually it was less prolonged. As a rule, the capacity to react showed a progressive diminution with successive injections, and in many it became completely exhausted. It persisted longest in animals with general tuberculosis—that is, in animals in which the disease was in all probability active. The experiments did not give any certain answer to the question whether capacity for reacting when once completely exhausted was later on regained.

[1] H.M. Stationery Office (through any bookseller). (Cd. 6796. 5s. 7d.)

ANTITYPHOID INOCULATION.

THE final report of the Antityphoid Committee, appointed by the Army Council in March, 1904, to investigate the practical prophylactic and therapeutic value of current methods of immunization against enteric fever, has been issued this week. An immense amount of research work has been quietly carried out by the committee, and valuable statistical data have been collected by officers of the Royal Army Medical Corps attached to units to make the inoculations and to observe the results. Much of the work has already been published, mainly in the *Journal of the Royal Army Medical Corps*, but this report gives a complete summary. We may direct attention to the following points: The first subject investigated was the development of immunity against the typhoid bacillus as shown by the quantitative estimation of the antibodies produced; the agglutinins, bacteriolysins, and bactericidal substances were all found to be much increased as a result of inoculation with a typhoid vaccine. The next subject to be investigated was the most efficient way of killing the bacteria. Chloroform, alcohol, tolulol, and glycerine were tried, but were not found to be altogether satisfactory. Lysol 0.25 per cent. sterilized a culture in twenty-four hours without reducing its immunizing properties. Exposure to a temperature of 53° C. for one hour was found to be the most satisfactory procedure; after the culture has cooled to room temperature 0.25 per cent. of lysol is added, to minimize the risk of subsequent contamination. The relative efficacy of vaccines prepared in different ways was also thoroughly investigated, both by measuring the development of protective substances in the blood and by determining the degree of protection which the different vaccines conferred on animals against multiple lethal doses of virulent typhoid bacilli. The vaccine prepared according to Sir A. E. Wright's method was found to be the most satisfactory. Many attempts were made to devise a simple method of standardizing the vaccine; a modification of Sir A. E. Wright's method of counting the number of bacteria in a given volume has been finally adopted. An important point which has been cleared up is the effect of storing the vaccine and of exposure to heat on its keeping qualities; after six months considerable deterioration takes place in its immunizing properties. The effect of swallowing the vaccine was also investigated; unfortunately this simple plan has been found to be too uncertain in its results to warrant its general adoption. The reaction which follows inoculation is much increased in severity by fatigue, exposure to the sun, or by the ingestion of alcohol. For statistical purposes the histories of 19,314 soldiers, whose average period of service abroad was twenty months, were carefully followed, and in all cases of typhoid fever every care was taken to verify the diagnosis bacteriologically. Of this number 10,378 were inoculated, and 8,936 were not inoculated. The case incidence of typhoid fever among the inoculated was 5.39 per mille, and among the non-inoculated 30.4 per mille. A subcommittee composed of Dr. James Galloway, Dr. R. Foord Caiger, and Sir William Leishman, investigated the medical history sheets of 258 undoubted cases of

typhoid fever. Of this number 202 were not inoculated and 56 were inoculated. The cases were divided into two main groups, the mild and the severe, including fatal cases; among the inoculated men 66.1 per cent. of the cases belonged to the mild group, and only 33.9 per cent. to the severe group. Among the non-inoculated men only 29.3 per cent. of the cases could be placed in the mild group, while 70.7 per cent. were classed as severe. The committee recommends that the protective inoculation against typhoid fever should be extended as much as possible, or better, be made universal, and that research work on this subject should be continued. It may be noted that inoculation against typhoid fever is now compulsory for everyone under 45 years of age in the American Army.

THE SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH.

The ceremony of initiating the building of the South African Institute for Medical Research, to which allusion was made in our issue for April 16th, was performed at Johannesburg on the last day of the following week on a site on Korte Street, not far from the General Hospital. The estimated outlay on building is £32,500, and towards this amount and the cost of its equipment the Witwatersrand Native Labour Association has furnished £40,000, while the Provincial Government gave the ground. The same two bodies will also for the time being provide between them a small annual sum by way of income for the institute. Two foundation stones—one inscribed in English, the other in Taal—were laid by Sir Kendal Franks, C.B., who subsequently delivered a short address. He had been invited, he said, to perform the ceremony because he was President of the South African Committee of the British Medical Association, a body which had members scattered all over South Africa and represented the medical profession as none other could. Hence it was the whole medical profession of South Africa which was honoured by the invitation accorded him to perform the ceremony, and it deeply appreciated the fact. Around the stones which he had laid would be raised a building dedicated to the good of mankind and the preservation of human life. The work done in it would, it was hoped, lead to the discovery, first, of the causes of the diseases chiefly affecting South Africa, and then of a means of freeing the land from these scourges. Such objects had been attained elsewhere, and could be attained in South Africa. What the revolution brought about in surgery by the discoveries of Pasteur and Lister had done for mankind was well known. When the same theories were applied to medical diseases the results were obtained more slowly, but they were none the less revolutionary. The problems to be solved were numerous, and bristled with difficulties, and had to be investigated separately. The prolonged, accurate, and patient investigation required could only be carried out in an institution such as was now to be erected. In regard to diseases of animals, a similar institution already existed at Pretoria, and was doing work which had in many instances spelt salvation for the farmer and his stock. An address was also delivered by Dr. Watkins-Pitchford, who is to be medical superintendent of the institution. The pessimistic outlook which in the past had called for the establishment of homes for the incurable had changed, he said, to an optimism which demanded the provision of institutions for medical research, and by the foundation of the future institution South Africa had placed itself in the front rank of civilized nations. Industrial diseases and those commonly associated with the aggregation of people in South African towns, compounds, and camps, would receive special attention, and inquiry would also be made into any subject pertaining to the domains of medicine and surgery and public health. The wards provided would give facilities for the systematic observation of the results of disease. Modern statistical methods would be employed, and a library and museum relative to the special objects of the institution be acquired. Since the mining industry attracted natives from all parts of South Africa, advantage would also be taken of the opportunities for anthropological and ethnological research. Technical reports on the work done would be issued from time to time and facilities afforded to practitioners to acquire a knowledge of laboratory methods of investigation. There would also be provision for the holding of medical discussions, and popular lectures would occasionally be delivered. The institution, however, at present had nothing in the way of an assured income, and it was to be hoped that those who were amassing wealth in South Africa would provide an endowment fund. The plans of the institution show a handsome edifice surrounding three sides of a square; the transverse block has a cupola in the centre, but the general style of the architecture is classic.

THE SERUM TREATMENT OF EPIDEMIC MENINGITIS.

The fourth and final report on the experience gained by the Rockefeller Institute during six years' treatment of epidemic meningitis with a specific serum has been published by Dr. Simon Flexner,[1] whose verdict is unequivocally in its favour. This system of treatment was started early in 1906, and the present report deals with an analysis of about 1,300 cases treated with serum distributed by the institute in the United States, Canada, Europe, and Asia. The mortality among 1,294 consecutive cases treated was 30.9 per cent., whereas that of the recent pandemic in the United States was approximately 70 per cent. The importance of giving the serum early is shown by a table in which the mortality among patients treated between the first and third days of the illness is seen to be 18.1 per cent., while it was 36.5 per cent. among patients treated later than the seventh day. It is a significant fact that this latter group includes 666 cases, while the group treated early includes only 199 cases. Less than one-sixth of all the cases were treated early, and one-half were treated after the first week of the illness. It is therefore probable that when the serum is more generally available and confidence in its value extends, it will be given earlier and the results will become better. The most favourable results were obtained at ages between 5 and 10 years, and the least favourable after 20. Spontaneous recovery from the disease is usually by lysis, and the number of recoveries by crisis is relatively small. Indeed, in some epidemics this class of case is unknown. After treatment with serum within the first three days of the illness, recovery by crisis was as common as by lysis. When the serum was given later in the illness recoveries by lysis became relatively more frequent. It was also noticed that the proportion of cases which recovered by crisis was highest at the age most favourable to recovery, and that it was lowest at the most unfavourable age. The incidence of complications and sequels to the illness was also reduced by the treatment, but affections of the middle ear were still frequent, and occurred in about 3.5 per cent. of all cases. Other complications which arose in spite of the treatment were impairment of vision and arthritis. The latter was invariably transitory, and its disappearance was hastened by the direct injection of the serum into the inflamed part. Although at first regarded as doubtful, it is now clear that cases of fulminant meningitis may also benefit by the treatment; for several recoveries followed it in such cases, and the lowering of the mortality in the first three days of the illness, which is the period in which the fulminant cases end in death, also supports this view. But it is undoubtedly the ordinary type of epidemic meningitis which responds most satisfactorily to the treatment, as shown by the general reduction in mortality and by the change of the termination of the

[1] *Journal of Experimental Medicine*, May 1st, 1913.

illness from lysis to crisis. It is this transformation, and the general shortening of the whole course of the illness, and the consequent suppression of the chronic form of infection, which justify the claims advanced by the advocates of the treatment. One of the most conclusive objective criteria of the action of the serum is its effect on the meningococci, whose multiplication is arrested and whose phagocytosis and intraleucocytic digestion are accelerated. The tendency to hydrocephalus in the young has been reduced, and the intraventricular injection of the serum has frequently abolished infection and inflammation of the cerebral ventricles, and has re-established communication between the ventricles and the subdural space of the spinal cord. The initial difficulties of administration by direct subdural injection have been largely overcome, and the serum is now being used in private as well as in hospital practice. Dr. Flexner discusses some of the latest epidemics in which the serum was extensively used. One of these is reported on by the Louisiana State Board of Health, and is known as the Shreveport epidemic of 1912. There were 250 cases, 176 of which were not treated with serum. The mortality among these was 85 per cent., whereas it was 30 per cent. among those treated with serum. Dr. Flexner's report concludes with a repetition of the claims made for the treatment in 1909, when an analysis of 400 serum-treated cases was made. "The antimeningitis serum, when used by the subdural method of injection, in suitable doses and at proper intervals, is capable of reducing the period of illness; of preventing in large measure the chronic lesions and types of the infection; of bringing about complete restoration of health in all but a very small number of the recovered, thus lessening the serious, deforming, and permanent consequences of meningitis; and of greatly diminishing the fatalities due to the disease." The Rockefeller Institute, it is stated, no longer prepares the serum, and will not continue to collect histories of cases treated with it.

THE SOFTENING, PURIFICATION, AND STERILIZATION OF WATER SUPPLIES.

MORE than a year ago the Director of Water Examinations for the Metropolitan Water Board presented an important and interesting report on the excess-lime method, primarily as a germicidal agent and secondarily for softening purposes. The germ of this report is to be found in the seventh report, which stated that "quicklime (about 75 per cent. CaO) added to raw Thames water in the proportion of 1 part of quicklime to 5,000 parts of water kills *B. coli* in five to twenty-four hours under laboratory conditions of experiment." During 1912 research work into the truth of this idea was pursued, and as a result of the year's work it is stated in the eighth report that if 15 lb. of quicklime is added to 7,500 gallons of raw unstored Thames water it will kill within twenty-four hours the microbes of water-borne disease; then, if these 7,500 gallons were added to 2,500 adequately stored water, which would neutralize the excess lime, there would be 10,000 gallons of water which would have lost 15 parts of its total hardness, would contain no undesirable excess of lime, and would be innocuous. The process would quickly render an initially foul water absolutely safe bacteriologically, and would virtually increase the yield of the sources of supply by rendering the water always fit for abstraction. The complete fulfilment of these anticipations would raise the purity of the metropolitan water supply to a pitch of perfection never before attained, if ever seriously contemplated as possible, by any water works authority in the world dealing with sources of supply comparable to those of London. All this as the result of laboratory experiments is very satisfactory, but the practical question arose whether these conclusions would stand the test of a series of outdoor experiments on a large scale. To set this question at rest the Water Board at a recent meeting decided to incur an expenditure not exceeding £600 to demonstrate the practical utility or otherwise of the "excess lime method." We look forward with interest to the result of these larger experiments. They should tell us what the lime method will cost per 1,000,000 gallons, including the capital cost of machinery and softening tanks, and the periodical removal and disposal of the sludge from the tanks. They should prove also whether the method will deal satisfactorily with the colour and contents of flood water, or whether it will result in browner water with more organic matter in it, and also whether the incidental softening of the water will be an unmixed good from the health point of view. These and many other questions are involved in the experiments about to be undertaken, which will, we hope, yield speedy and satisfactory answers. The question of the ultimate water supply, not only of London but of other places also dependent on contaminated rivers of limited flow to meet an increasing demand, will be less urgent if the water which now runs to waste can be made potable at a reasonable cost. Now that the Water Board has decided to incur the necessary expenditure for these experiments they should be pushed on with all reasonable speed. More than a year has passed since the "Excess Lime" report was submitted to the Board, and it is seven months since the Committee specially interested in the quality of London's water first recommended that the laboratory experiments detailed in the report should be tested on a larger scale outside. So far there has been no evidence of hurry on the part of the Board. Further delay, however, would not only be highly undesirable in face of the heavy responsibility of the Board, but might also involve it in large expense, which may possibly prove to be unnecessary, in connexion with the new Thames reservoirs recently commenced.

THE LAW OF LEAST EFFORT IN SPEECH.

WE are hearing much at present of the "Board School Voice," and, of course, the accent of the cockney is distressing to a cultivated ear. But the voice and accent of a certain class of educated people make almost equal discord of our speech, which, when properly uttered, is far from deserving the reproach of harshness often brought against it by foreigners who cannot appreciate the richness of its melody. This reproach is doubtless founded on the wrong way in which it is often spoken. At present among all classes the law of least effort is coming more and more to govern our language. From the "'arf a mo'" of the cockney to the clipping of words now so common at the universities, the tendency to spare the vocal organs any avoidable stress is everywhere in evidence; it is common among the class whom Bishop Warburton happily designated the "better vulgar." Young ladies speak of "undies" when they mean underclothing, and complain of "indies" when they suffer from indigestion. It used to be a mark of fashion to dock the "g" from the end of words, and to speak of "ridin'," "amusin'," and so on; and the fashion survives to-day, for any mutilation of speech which gives less trouble in utterance tends to persist. We may, however, comfort ourselves with the reflection that the tendency is not new, and that not all clipping habits become permanent. Nearly two hundred years ago Swift, in his *Introduction to Polite Conversation*, called the attention of the reader to the fact that he has been "diligent in refining the orthography by spelling the words in the very same manner as they are pronounced by the chief patterns of politeness at courts, at levies, at assemblies, at playhouses, at the prime visiting places by young templars and by gentlemen commoners of both universities who have lived at least a twelvemonth in town and kept the best company. For instance, *can't, han't, shan't, didn't, coudn't, woudn't, isn't, en't*, with many more; besides

several words which scholars pretend are derived from Greek and Latin, but now pared into a polite sound by ladies, officers of the army, courtiers and templars, such as 'jommetry' for the geometry, 'vardi' for verdict, 'lard' for Lord, 'learnen' for learning, together with some abbreviations exquisitely refined as *pozz* for positive, *mobb* for mobile, *phizz* for physiognomy, *rep* for reputation, *plenipo* for plenipotentiary, *incog* for incognito, *hypps* or *hippo* for hypochondriacs, *bam* for bamboozle . . . whereby much time is saved and the high road to conversation cut short by many a mile." "Mob" has been adopted into the dictionaries, and "plenipo," "phiz," and "incog" are still in use. "Rep," "hippo," and "bam" have become extinct. But, now that economy of effort has once more become fashionable, it may be expected that clipped forms will largely take the place of the full words in ordinary speech, and will in due course find their way into the select society of the dictionary. The movement is in accordance with the physiological principles which regulate pronunciation, and of these the chief is ease in articulation. We may hazard the conjecture that, in accordance with the law of least effort, the aspirate will in time fall into disuse, as has occurred in languages of Latin origin. The old Romans themselves had the same trouble with the letter *h* that vexes some Englishmen. Even 'Arry had his prototype among them, as we know from the Arrius ridiculed by Catullus, who

> *C*hommoda dicebat, si quando commoda vellet]
> Dicere, et *h*insidias Arrius insidias.

He was sent on a mission to Syria, and soon a dreadful report reached Rome that

> Iōnios fluctus, postquam illuc Arrius isset
> Jam non Iōnios esse, sed *H*iōnios.

MICROMELIC DWARFS AT BERGAMO.

During a recent and somewhat hurried visit to Bergamo Professor Max Kassowitz of Vienna had his attention arrested by the extraordinary number of dwarfs whom he saw there.[1] They were all affected with micromelic microsomia, possessing large crania broad in the vault, with the root of the nose depressed and having short and twisted limbs. Professor Kassowitz was only about two hours in the Upper Town (*citta alta*), and yet he counted at least twenty of them there; he noted not more than one in the Lower Town (*citta bassa*). The subjects were both adults and children, and it seemed to him that there were more women than men. They all had intelligent faces. He calls upon the medical men of Italy, and especially of Bergamo, to investigate this curious instance of endemic micromelic dwarfism, and refers to a possible, although not a very probable, allusion to its occurrence in this same town in Northern Italy in Shakespeare's time. In *A Midsummer Night's Dream*[2] Bottom, the weaver, says: "Will it please you to see the epilogue, or to hear a Bergomask dance between two of our company?" "A dance of clowns" then takes place. A "Bergomask" is defined as a rude *clownish* dance, such as the people of the town of Bergamo were wont to practise, and there is evidence that the people of this town were spoken of commonly as clownish in manners and in speech. Lean, in his *Collectanea*,[3] gives several sayings about Bergamo and its inhabitants, amongst which are two or three which refer to the thick speaking of the Bergamasks—for example, "Bergamasco ha 'l parlar grosso e ma 'l ingegno a far sottile." There is another saying in which the inhabitants of Bergamo are described as buffoons (*zanni*)—namely, "Sicilia da i Covelli, Francolini i Graziani, Bergamo gli Zanni," etc. There is also some evidence that in stage representations the clowns were made of a stunted and contorted, dwarfish appearance. It will be interesting if the Bergamask doctors are able to throw any light on this matter.

[1] *La Pediatria*, xxi, p. 148, 1913.
[2] Shakespeare, *Midsummer Night's Dream*, Act 5, Sc. 1, l. 360.
[3] Lean, *Collectanea*, 1, pp. 298, 299.

NOSTRUM LEGISLATION IN WESTERN AUSTRALIA.

For many years past the secret remedy proprietor has had a freer hand in the British Empire and America than in most Continental countries, both in regard to what he may put into his nostrum and to the claims he may make for it. Experience has shown, however, that the public interest requires this freedom to be severely curtailed. The American Pure Food law of a few years ago has had a good effect in preventing the sale of many fraudulent or dangerous medicines; the Australian States and New Zealand have for some time been engaged with proposals for legislation directed to the same end, and in this country the holding of the present Parliamentary inquiry is a step in the same direction. Western Australia, however, appears to be the first British state to have actually put into force a tolerably stringent law against the evils of this traffic, and it is of interest to note exactly what is the present position in that colony. By the Health Act of 1911, amended by subsequent Acts of 1911 and 1912, the general control and supervision of matters affecting the public health are put in the hands of a medical practitioner, who is styled the Commissioner for Public Health, while for matters relating to the sale of food and drugs an Advisory Committee, consisting of the Commissioner, the Government analyst, a bacteriologist, and two other persons conversant with trade requirements, is appointed by the Governor. The Act provides that the Commissioner may, on the advice of this Committee, prohibit the sale of any patent or proprietary medicine which in the opinion of the Committee is deleterious or dangerous to health, and any person selling or advertising such medicine shall be guilty of an offence; the general penalty for a breach of the Act is a fine not exceeding twenty pounds and a daily penalty not exceeding forty shillings. It is further made an offence to publish or cause to be published, whether in a newspaper or a publicly exhibited notice or by distribution through the post or otherwise, any statement intended to promote the sale of a medicine or appliance for the prevention, alleviation, or cure of disease, which is false in regard to the ingredients, composition, structure, nature, or operation of the article, or to the effects which have followed or may follow its use. An important section of the Act empowers the Governor, on the advice of the Advisory Committee, to make regulations on many matters arising out of the Act, and amongst other things such regulations may require any specified information to be given on the label of any food or drug. The regulations which have been made and are now in force require that the principal label attached to every package containing any patent or proprietary medicine shall bear a statement in English of the ingredients and the proportions of the same in such medicine. Exemption from this requirement as to labelling may, however, be obtained by the manufacturer or importer by depositing the same particulars with the Commissioner and signing an undertaking that all such medicine sold in the colony shall comply with the particulars so deposited. We are informed that considerable opposition has been shown by the owners of proprietary medicines and their agents, but that the Government has refused to withdraw or amend the regulations. It is not easy to see what objection can be taken to these enactments by persons desiring to sell harmless medicines and to make only true statements in regard to them, but it is evident that the sale of those which depend on false or exaggerated statements will become practically impossible. The manufacturer who deposits his formula with the Commissioner will avoid making it public, and will, therefore, not lose the commercial value of his trade secret—if he has one. But the maker's statement of formula—checked, of course, by the Government analyst—will enable the authorities to judge if the advertised statements in regard to the medicines are false, and, if they are, to take action against those responsible. It will be interesting and instructive

to watch the working of this law in Western Australia, which might well serve as a pattern for legislation in this country.

POOR LAW APPOINTMENTS AT BURNLEY.

WE have frequently had occasion to mention a dispute which has been going on for some time between the Burnley Division, acting on behalf of the Poor Law medical officers of the Burnley Union, and the local guardians. Some months ago all the district medical officers of that union resigned their posts on account of the inadequacy of the remuneration, but not until they had made attempts to get redress from the guardians. The Burnley Division has cordially supported the Poor Law medical officers in the attitude they have taken up, and, with one exception, every medical practitioner in the neighbourhood has, we believe, signed an undertaking not to apply for any post under the guardians to the detriment of the late holders until a settlement has been reached to the satisfaction of the Division. The guardians, instead of frankly meeting the difficulties, which are mainly those of underpayment, put forward a scheme of redistribution. The Division and the Poor Law Medical Officers' Association of England and Wales memorialized the Local Government Board, asking it to disapprove the scheme of the guardians, on the ground that though the new arrangement was an improvement on the old as regards the scale of payment, the remuneration of the doctors concerned would still remain far below the average of that paid in other unions. The Division and the Poor Law Medical Officers' Association took special objection to the proposal of the guardians to make each medical officer a public vaccinator in his own district, because it was obvious that this was a mere pretext for using the fees for public vaccination to eke out the payment for the Poor Law work. It is to be regretted that the Local Government Board has sanctioned the rearrangement of the medical relief and public vaccination districts as proposed by the guardians, thus in effect washing its hands of the affair and throwing the responsibility upon the guardians. It is really unfair that the Local Government Board should shirk its responsibilities in this way. It is evident from the way in which that Board has dealt with the matter that it was, to say the least of it, doubtful of the wisdom of the proposed action of the Burnley Guardians. As one of the guardians said at the last meeting, the Local Government Board had played with the matter for five months. The Royal Commission on the Poor Law made severe comments on the extent to which sweating goes on in the Poor Law medical service; the Local Government Board itself has frequently protested against the small salaries offered, and particularly against that juggling with vaccination and parish appointments which is a striking feature of the present case. Yet it generally contents itself with mere protests, evasive answers, or futile delays, rarely taking decisive action. Those members of the medical profession and those public representatives who take action against the continuance of these grievances deserve more support from the Local Government Board. The guardians have now advertised for medical practitioners to fill the position of district medical officer and public vaccinator in fifteen districts. A Warning Notice regarding these appointments appears in our advertising columns, and it is earnestly to be hoped that no member of the profession will apply for one of them without making himself thoroughly conversant with the facts. We have little doubt that any one who makes such inquiries will decline to assist the guardians in attempting to defeat the local practitioners, who have so loyally bound themselves together for the ultimate good of the local profession and of the poor of the district. The pauper who is unable, often through no fault of his own, to help himself, and who is under the protection of the guardians, should have the best medical attendance that can be provided, not only for his own sake, but because it is more economical in the long run. Efficient medical attendance cannot be got at sweating rates, and it is this sweating which the Burnley Division has determined to destroy in that district. The action of the Division deserves the admiration and imitation of other districts. Do the Burnley public realize that their board of guardians, in refusing to meet a deputation of the local medical profession and in declining to raise the rate of remuneration, is perpetuating the worst abuses of Bumbledom?

CLINTON DENT.

THE Association of British Members of the Swiss Alpine Club recently presented to the Swiss Alpine Club a mountain hut, the Cabane Britannia on the Klein Allalinhorne, Saas Fee. It was opened with some ceremony on August 17th, 1912, and a letter dated August 13th from the President of the Association, Mr. Clinton Dent, was then read, in the course of which he expressed his profound regret that he was unable to take part in the festivities. In less than a fortnight after that letter was written Clinton Dent was dead. We gave in our obituary notice some account of his achievements as an alpine climber, and the association of which he was president has now issued a pamphlet containing an account of the ceremonies at the opening of the hut, commemorating Clinton Dent's influence in alpine affairs. It is well illustrated, among the photographs reproduced being a very characteristic photograph of Dent in mountain kit, and another of the Portjengret, one of the peaks which he was the first to ascend. The Committee of the Association of British Members of the Swiss Alpine Club, which has Mr. A. E. W. Mason as president, and among its vice-presidents Dr. O. K. Williamson and Dr. H. L. R. Dent, proposes to establish a Swiss memorial to Clinton Dent. A stone with an inscription will be erected outside the Cabane Britannia and a memorial tablet at Zermatt; further, if the sale of a certain number of copies can be guaranteed, Clinton Dent's book, *Above the Snow Line*, which is out of print, will be republished; this would be his best memorial as a climber. Subscriptions to the memorial should not exceed 10s. 6d., and may be sent to the Honorary Treasurer, Mr. J. A. B. Bruce, Selborne Lodge, Austen Road, Guildford, who will also, we presume, be glad to receive notifications of the desire to have a copy of the book if reprinted.

DR. WILLIAM H. WELCH, Professor of Pathology at Johns Hopkins Medical School, has been elected President of the American National Academy of Sciences for a term of six years.

THE annual dinner of the Indian Medical Service will be held at the Hotel Cecil, Strand, on Tuesday, June 10th, at 7.45 p.m., when the Director-General, Surgeon-General the Hon. Sir C. P. Lukis, K.C.S.I., will preside, and the Service will have the honour of entertaining the Marquis of Crewe, H.M. Principal Secretary of State for India. Officers intending to be present should communicate without delay with the Honorary Secretary, Lieutenant-Colonel P. J. Freyer, 27, Harley Street, W.

THERE will be four vacancies to be filled at the coming election of members of the Council of the Royal College of Surgeons of England on July 3rd. The President, Mr. Edmund Owen, and Mr. Golding-Bird have held their seats on the Council since 1905, but, being President, Sir Rickman Godlee does not vacate his seat, so that only two vacancies by rotation are to be contested this year, but there will be a third vacancy caused by the death of Mr. Clinton Dent, and a fourth made by Mr. Bruce Clarke's resignation. Mr. H. J. Waring, of St. Bartholomew's Hospital, has already expressed his intention to present himself for election on this occasion.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

JUBILEE OF DR. JAMES RITCHIE.

DR. JAMES RITCHIE, of Edinburgh, who has during the past few years occupied in turn the presidential chairs of the Obstetrical Society, the Edinburgh Medical Missionary Society, and the Medico-Chirurgical Society, and who has done much for the British Medical Association Branch in Edinburgh, was honoured on the evening of May 16th in connexion with another side of his activities. For fifty years Dr. Ritchie has been an office-bearer in Lady Glenorchy's United Free Church, and during that period he has acted for thirty-one years as Clerk of Deacon's Court and for fifteen years as Session Clerk, a post which he still holds. The congregation of Lady Glenorchy's church took the occasion of congratulating him and presenting him with a solid silver tray in commemoration of his jubilee. At the meeting at which the presentation was made by the Rev. Mr. James Harvey (the minister of Lady Glenorchy's), letters were read from several members of the medical profession (including Sir Alexander Simpson, Sir Halliday Croom, Sir James Affleck, and Sir Robert Philip) expressing the high esteem in which Dr. Ritchie was held by his brethren. Dr. J. W. Ballantyne and Dr. H. M. Church, who were present, also spoke, as personal friends, of Dr. Ritchie's manifold activities and constant attachment to all good causes. Dr. Ritchie, in acknowledging the presentation, gave interesting reminiscences of the Lady Glenorchy's Church of his boyhood, its ministers, elders, precentors, and its Mutual Improvement Society, which would nowadays be termed the Literary Society. He incidentally referred to the large number of persons pitted with small-pox then to be met with, and contrasted it with the freedom of the streets from such sights now, thanks to the protective effects of vaccination. There was a large gathering of friends and a pleasant evening was spent.

THE MIDLOTHIAN COUNTY COUNCIL AND SANATORIUMS.

At a meeting of the Midlothian County Council in Edinburgh on May 14th, presided over by Colonel Trotter, Convener of the County, a report was presented of the proceedings at the conference of county councils in the south-eastern district of Scotland regarding the provision of sanatoriums. The Chairman stated that the general opinion was that the councils should combine in the provision of sanatoriums under the Insurance Act rather than under the Public Health Act, one of the reasons being that they would under the former Act obtain large grants towards the original cost of erection of the sanatoriums. The opinion at the conference was that the counties concerned should combine for the purpose of providing a sanatorium, as being the most economical plan and the one likely to give the best results; it was also strongly favoured by the Local Government Board. They were not, however, in agreement as to the question of treating advanced cases of tuberculosis in the sanatorium. The report was approved. A letter was read from the Insurance Commissioners regarding the estimated expenditure on sanatorium benefit by the Midlothian Insurance Committee for the year commencing January 13th last. The Commissioners requested the county council to inform them whether it was prepared to sanction the expenditure, and pointed out that in that event the council would be liable to make good out of the general purposes rate half of any sum so sanctioned by it in excess of the amount available for defraying expenses. The Commissioners further stated that if the local authority agreed to pay half of any deficit incurred by the Insurance Committee the Treasury was prepared to find the remaining half. The Chairman pointed out that as the county was not in a position meantime to provide sanatorium benefit, it was hardly possible to rate the people for the present year. The amount required would probably mean 1¼d. on the rates. He moved that the account should not be sanctioned at present, and this was agreed to.

EDINBURGH ROYAL MATERNITY HOSPITAL.

At the annual meeting of the subscribers of the Edinburgh Royal Maternity and Simpson Memorial Hospital on May 19th, over which the Bishop of Edinburgh presided, a reference was made to the regrettable circumstance that the annual subscriptions showed a decrease of £121; this decrease, taken in conjunction with the fact that the ordinary income of the year (1912) had fallen short of the ordinary expenditure by the large sum of over £497, was causing the directors much anxiety. Part of the drop in annual subscriptions was probably due to the operation of the Insurance Act. The annual report which, along with the accounts was adopted unanimously, in referring to the effect of the Act, stated that it was too early to estimate its influence upon the numbers of patients taking advantage of the service offered by the hospital; but since the maternity benefit provided by the Act had become payable in January, 1913, the number of cases, both at the hospital and at the Leith branch, had diminished. The directors hoped that this was only a temporary condition, due to the unsettled state of affairs inevitably connected with the start of the operations of an Act of such magnitude. The Board had given earnest consideration to the new position created by the Act, and its delegates had been in consultation with the Commissioners, at whose suggestion communication had been opened up with the approved societies and the Insurance Committees of Edinburgh, Leith and district, with the view of coming to a satisfactory working agreement within the scope of the Act. After full consideration along with the Medical Board, the directors had suggested as a fair arrangement a flat rate of 15s. a case, payable by the societies on behalf of those who took advantage of the service of the hospital, either as intern or extern patients, and so far as the experience had gone, it was understood that the representatives of the societies considered the proposal reasonable and the rate moderate. It was reported that during the year (1912) the total number of patients attended through the hospital and its Leith branch was 1,915; 70 nurses had been trained in the institution, 78 undergraduates had attended the hospital and associated dispensaries, and some 50 medical men and women had received clinical instruction in August and September in connexion with the post-graduate classes then conducted. Professor Harvey Littlejohn, Dean of the Medical Faculty in the University of Edinburgh, spoke gratefully of the work which was being done in the hospital for the benefit of the students attending the university, but thought it was to be regretted that a larger proportion of the 200 undergraduates who annually passed away from Edinburgh as qualified medical men did not take advantage of the excellent teaching in the institution. The annual report also made reference to the improvements which had been made in the hospital during the year, more especially in connexion with the new operating theatre, the installation of the electric light, and the extended nurses' residence; of these changes some account was given in the JOURNAL for February 8th, p. 308.

BEQUESTS TO EDINBURGH ROYAL INFIRMARY.

Mr. William M'Ewan bequeathed £15,000 to the Royal Infirmary of Edinburgh and £1,000 to its Convalescent House at Corstorphine. A legacy of £1,800 by the late Sir James Pickering Gibson, Bart., some time Lord Provost of Edinburgh, and three other legacies amounting to £1,535 have also been received.

EDINBURGH SCHOOL BOARD AND MEDICAL MATTERS.

At a meeting of the Edinburgh School Board on May 12th, and on the motion of Mr. James Clark, K.C., C.B., who was in the chair, it was unanimously agreed to adopt the Committee's recommendation for the appointment of Miss Lisette A. M. Wilson, M.B., Ch.B., D.P.H., the City Poorhouse Hospital, to the position of Assistant Medical Officer under the board. Mrs. Leslie Mackenzie, the Convener of the Committee on Health, submitted the report of the medical officer for the session 1911–12, from which it appeared that the number of schools under the board's scheme of medical inspection was 70, compared with 62 in the previous year. There was marked improvement in the cleanliness of the children, of whom 27,000 had been examined in the year for their condition in this matter as well as for the state of their teeth, vision, and hearing. Mr. Ramsay, Convener of the Attendance Committee, stated that during the spring holidays 541 necessitous children had been provided with dinners. The proposal

to institute classes for defective children in the north side and in the west end of the city was agreed to, and the matter was remitted to the Health Committee. The Chairman then drew attention to the bill to enable the provision of medical treatment for children attending schools. Medical treatment followed as the inevitable corollary upon medical inspection, if the parents of the children were not in a position to provide it themselves. Whilst welcoming the principles of the bill, he pointed out that although the central authority undertook half of the cost of the medical inspection, there was no such provision made for the medical treatment. He proposed that the board should approve generally of the principle of the bill, but should express the opinion that the cost to the locality, like that of medical inspection, should not exceed half the total expenditure, the other half being met by Government grant. This was unanimously agreed to.

Treatment of Consumption in Edinburgh.

Sir Robert W. Philip and several members of the Board of Directors of the Royal Victoria Hospital for Consumption met a subcommittee of the Public Health Committee of Edinburgh Town Council on May 19th in connexion with the arrangement proposed to be entered into between the Royal Victoria Hospital and the city for the treatment of tuberculosis, when various preliminary matters were discussed. Further meetings will be held with, among others, the Burgh Insurance Committee before the matter comes before the Town Council again in the form of a report.

Ireland.

(FROM OUR SPECIAL CORRESPONDENTS.)

Royal Medical Benevolent Society of Ireland.

The annual meeting of the Belfast and District branch of this society was held in the Medical Institute, Belfast, on May 16th. Sir Otto Jaffé, LL.D., was in the chair, and Dr. Fielden (honorary secretary and treasurer) read the annual report. The total amount collected during the year was £157 19s. 2d., a slight increase over the previous year. The expenses were £6 3s. 2d., and the net contribution to the central fund was £151; 138 Belfast practitioners contributed £94, and 46 country practitioners, £28; this latter is a small proportion for country doctors; no doubt the difficulty lies in bringing the claims of the fund before them. The country practitioners form less than 25 per cent. of subscribers to the funds, yet over 60 per cent. of the money distributed in grants goes to widows of practitioners who live outside Belfast. Reference was again made in the report to the question of converting the institution into a medical insurance society, and one member withdrew his subscription as no attempt had been made to carry out such a project. Professor Symington was re-elected president, Sir William Whitla, Sir Alex. Dempsey, Sir Otto Jaffé, Dr. R. J. Purdon, Dr. M. F. Cahill, Dr. Gardner Robb (all of Belfast), Dr. J. B. Johnson (Gilford), Dr. J. J. Adams (Antrim), Dr. R. A. Shekleton (Holywood), Dr. James Wallace (Knockahollet) were elected members of committee, and Dr. Victor Fielden was elected honorary secretary and treasurer. A cordial vote of thanks was passed to Sir Otto Jaffé for taking the chair.

Roentgen Rays at South Infirmary, Cork.

At the monthly meeting of the South Infirmary, Cork, a letter was read from a firm of solicitors offering on behalf of a client £500 as a donation to the funds of the hospital, to be applied as may be arranged hereafter in connexion with the *x*-ray department of the hospital, so that its sphere of usefulness may be increased by the more extended employment of the Roentgen rays in the investigation and treatment of disease. The offer is made subject to the conditions that the committee of management appoints an honorary specialist to the department, who must be a duly qualified medical man who has devoted special attention to *x*-ray work, and that he shall be entitled to charge reasonable fees in cases of private patients applying to the department.

Presentation to Dr. George Elliott, Belfast.

The medical profession was entertained by the council of the Belfast Medical Guild at a smoking concert in the Medical Institute, Belfast, on the evening of May 13th. The more immediate object of the function was to make a presentation to Dr. George Elliott, who was leaving to take up practice in England. Dr. Elliott had been honorary secretary to the guild from its inception, and had worked strenuously and devotedly in the difficult and rough paths of medical politics and ethics during the past two years. He had also been secretary of the Belfast Division of the British Medical Association, and in that capacity had rendered valuable services. The president of the guild, Dr. T. C. D. Cathcart, made the presentation of a purse of sovereigns and an album on behalf of the profession. He extolled the services of Dr. Elliott, expressed regret at his departure, and wished him God-speed in his new sphere. Dr. Gardner Robb, chairman of the Belfast Division, supported the words of the president of the guild, and Dr. Elliott suitably replied. Mr. R. J. Johnstone said that in Mrs. Elliott the doctor had an indefatigable co-worker, and that their heartiest thanks and good wishes should be conveyed to her, and Dr. Elliott returned thanks on her behalf. An enjoyable evening, varied with songs and recitations, was passed.

Presentation to Dr. Laverty of Rathfriland.

On May 2nd, at a meeting of the medical men of South Down at Rostrevor, Dr. Laverty of Rathfriland was presented with a cheque as a mark of esteem and an expression of the sympathy of his colleagues in respect of charges of neglect of his professional duties, from which he was exonerated after a sworn inquiry held by the Local Government Board. Dr. M'Cartan, who occupied the chair, expressed the great pleasure it afforded him to be the spokesman of his colleagues in asking Dr. Laverty's acceptance of a cheque towards the expenses which he had incurred in meeting and successfully refuting the charges that had been brought against him. Dr. Laverty deserved the thanks of his brethren for the decisive steps he had taken, as in fighting his own battle he was also fighting for the rest of the profession. The cheque was the spontaneous outcome of his colleagues' confidence, sympathy, and respect. Dr. Laverty, in his reply, said that he was well rewarded for his fight by the kind sympathy and good fellowship of his brethren.

Unvaccinated Condition of Ireland.

Of late years, chiefly owing to the energies of branches of the Antivaccination Society started throughout the country, the number of vaccination defaulters has risen so rapidly that to-day in many districts the majority of the children have never been vaccinated. The boards of guardians refuse to enforce the Vaccination Act, and pay no heed to the remonstrances of their medical officers or of the Local Government Board. However great the danger caused by this unvaccinated condition of the population may be in England, it is much greater in Ireland, owing to the less rigorous attention that is paid in this country to sanitation and inspection. The condition of the country may be gathered from the following figures which have been recently published: In Newry the guardians were notified by the dispensary medical officers that about 1,000 children in the union had not been vaccinated. In Gorey, co. Wexford, the dispensary doctor reported that there were 399 unvaccinated persons in his dispensary district alone; the board of guardians, however, made no order on the report. Reports to the same board of guardians, that the unvaccinated persons in Coolgreany numbered 140, and in Killenagh and Wells 283, were treated in the same way. At Fermoy a letter was read to the board of guardians from the Local Government Board stating that steps should be taken to ensure compliance with the law on the part of the defaulters under the Vaccination Acts in the union, whereupon a proposal that notices should be posted in the dispensary districts, warning people that they need not have their children vaccinated if they did not wish to do so, was carried unanimously.

Overcrowding in Asylums.

The resident medical superintendent reported at the last monthly meeting of the Clare Asylum Committee that there were in the house at the close of the year 488 inmates—273 males and 215 females, the largest number recorded. The asylum, he said, continued to be over-

crowded, specially on the female side. He hoped the new female observation dormitory would soon be ready for occupation.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

WALES.

THE UNIVERSITY OF WALES.

AT the court of the University of Wales held on May 17th at Bangor, Mr. Lynn Thomas, C.B., Surgeon to the King Edward VII Hospital, Cardiff (the Cardiff Infirmary), was elected Junior Deputy Chancellor in succession to Colonel Sir Pryce Jones. The King is Chancellor of the university, and Lord Kenyon, who presided over the court, is Senior Deputy Chancellor. The other candidate for the post of junior deputy chancellor was Sir Marchant Williams, one of the Treasury representatives on the court of the university. We recently had occasion to refer to the steps which were in contemplation to complete the Medical Faculty of the University of Wales, and to establish a complete medical school in the University College for South Wales and Monmouthshire at Cardiff. In electing Mr. Lynn Thomas to the office of Junior Deputy Chancellor, the Court was no doubt actuated by the desire to place in high office one who is intimately identified with the scheme for the establishment of a complete Welsh medical school in Cardiff. His participation in the *Wanderlust*, to which, as noted elsewhere, British surgeons have wisely in recent years more and more given free rein, has afforded him opportunities of becoming acquainted with the system of medical teaching and research in the universities and university hospitals and institutes of other countries. This experience will stand the Welsh school in good stead during the deliberations on the many important questions which must shortly be decided.

GIFT TO THE NEWPORT HOSPITAL.

At the meeting of the directors of the Newport and Monmouthshire Hospital on May 30th, Sir A. Garrod Thomas, M.D., who was in the chair, announced that Lord Tredegar had presented, in memory of his uncle and predecessor in the title, the house and grounds of The Friars, a beautiful house of Gothic style, situated on an eminence above the hospital and quite close to it. The donor hoped that the house would be used as a convalescent home, and the gardens, which extend for some 14 acres, as pleasure grounds for the benefit of the hospital generally. Sir Garrod Thomas, in making the announcement, said that the gift would place the Newport Hospital in a most enviable position, and without encroaching upon the green fields, which extended right up to the present hospital grounds, it would be possible to make any necessary extension of the hospital buildings. The value of the gift is estimated at over £20,000. Lord Tredegar was unanimously elected president and trustee of the hospital in place of the late peer.

THE CARDIFF HOSPITAL.

The medical board reported to the governing body of the Cardiff Hospital on May 14th that a communication had been received from the Honorary Secretary of the Swansea Division of the British Medical Association with reference to the treatment of members of any society or association having for its object the employment of medical men under conditions not approved by the medical profession. After careful consideration the medical board had decided to reply that the medical staff was in full sympathy with the staff of the Swansea Hospital, but, as no communication had been received from the Cardiff Division of the Association, no action could be taken. After a member had urged the hospital board not to allow any local dispute to interfere with the work of the hospital, the discussion closed.

LIVERPOOL.

ROYAL INFIRMARY.

THROUGH the energy and enthusiasm of one of the Liverpool daily papers a fund of over £2,000 has been raised to provide the Royal Infirmary with a supply of radium sufficient for therapeutic purposes. It will be under the control of the radiographer of the institution, Dr. Thurstan Holland.

SWIMMING BATHS.

The City Council has decided to provide swimming baths at the Pier Head, the heart of the business portion of the city. This scheme will cost little short of £100,000, but the resulting building will be worthy of the city and in keeping with the important edifices in the same neighbourhood.

ABATTOIRS.

The question of the removal of the abattoir from the neighbourhood of the university and the Royal Infirmary is still undecided, but will shortly be brought to a definite issue. From a medical and an aesthetic point of view there can be little doubt as to the desirability of a removal.

GYNAECOLOGY AND OBSTETRICS.

Dr. Willett has been appointed to the staff of the Lying-in Hospital, and to the staff of the Hospital for Women. He thus fills the two vacancies caused by the death of the late Dr. Arthur Wallace.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

NEW COCAINE RULES.

REVISED rules regulating the import and possession of cocaine in the Punjab have recently been published. They cover, with certain exceptions, all cocaine preparations, and all drugs, synthetic or other, having a like physiological effect to that of cocaine. The quantities of such drugs allowed to be possessed by certain specified persons are as follows:—By officers of Government, such drugs as come into their possession in the course of their official duties; by medical practitioners (including medical and veterinary officers of Government when engaged in private practice) up to the limit of half an ounce; by a licensee, up to the limit of his licence; by any other person, up to the limit of such quantity as he may have purchased on the prescription of a qualified medical practitioner. The preparations of cocaine specially exempted from these rules are as follows:—Cocaine used in impure solutions in ointments for local application and made nauseous to the taste, or the following bona fide proprietary medicated articles:—(1) Toothache drops. (2) Ear drops. (3) Compound tablets of lozenges composed of—(*a*) cocaine, chlorate of potash, and borax; (*b*) krameria and cocaine; (*c*) menthol, cocaine, and red gum; (*d*) benzoin and cocaine, provided that they are stated by the makers to contain not more than $\frac{1}{16}$ grain of cocaine, novocain, eucaine, beta eucaine and beta eucaine lactate, or holocaine in each lozenge or tablet; and certain proprietary mixtures. There have recently been many cocaine raids, and the Report room at Sall Police Station has been overflowing every morning with persons arrested the previous night on charges of being in possession of the drug.

MOSQUITOS IN ASSAM.

An interesting experiment has been made by Captain T. C. McCombie Young, I.M.S., under the instructions of Government, which sanctioned an expenditure of Rs.900 in the new civil station of Dacca. The Ramna, as it is called, is a recently cleared area upon which the residences of civil officials and some of the new Government offices at Dacca were built. Numerous tanks and ruins of mosques give evidence of its former habitation. Captain Young started operations in November, 1911. The area under treatment comprised about two square miles, and the buildings on it were good class private houses with their compounds, a residential college, and

some Government offices. The operations consisted in cleaning such tanks as needed it, sweeping and flushing drains and watercourses, and the use of kerosene. Every breeding ground, actual or potential, within the area was marked down on a map and regularly treated, and Captain Young was satisfied that no breeding of mosquitos was taking place within the area. Nevertheless matters were not materially improved, for whenever there was even a gentle breeze from the south the cantonment was invaded by mosquitos transported from the breeding grounds in Dacca City a mile and a half away. Captain Young concluded therefore that it would be necessary to carry out larvicidal measures in Dacca City as well. To do this effectively it would first of all be necessary to provide an efficient surface drainage system at a cost of 50 lakhs of rupees.

Special Correspondence.

PARIS.

The Cause of Mercurial Tremor.—Transudates and Exudates.—Pericardotomy in Tuberculous Pericarditis.

DRS. GUILLAIN AND LAROCHE reported at a recent meeting of the medical society of the hospitals the results of a clinical study of the etiological factor of the tremor which occurs in chronic mercurial poisons. They pointed out the resemblance between mercurial tremor and the tremor of cerebellar disease, and the resemblance also of the symptoms of slurring of speech, nystagmus and ataxic movements frequently present. From these signs and from the fact that in many other drug toxaemias certain portions of the nervous system are selected for attack, they conclude that mercurial tremor is in reality caused by a toxic lesion of the nerve centres, and more especially of the cerebellum.

At a recent meeting of the Society of Biology, Dr. Villaret made some observations on the differentiation of a transudate from an exudate. A series of 200 effusions was examined by the Gaugi Rivalta collargol and violet reactions. The violet contact-reaction with hydrochloric acid pointed to the presence of blood corpuscles in the effusion. In the collargol reaction the silver salt was precipitated by the addition of a few drops of transudate, but was not precipitated by the addition of an exudate. The use of these reactions led to the conclusion that in ascites from cirrhosis of the liver the fluid was primarily a transudate, due to the hypertension existing in the portal system, and only became an exudate secondarily to an infection of the peritoneum.

The results of two operations of pericardotomy for pericarditis with effusion were recently communicated by Dr. Jacobs to the Surgical Society. In both pericardotomy without drainage was performed, and in both cure followed. The first patient was a soldier, aged 21. The temperature was 102.7° and the pulse 120, and cardiac dullness was markedly increased; the patient appeared very ill. Pericardotomy was performed, and 700 to 800 grams of fluid were evacuated. The pericardial incision was not closed, but the muscles and skin were sutured, and the wound healed satisfactorily, and complete cure resulted. Dr. Jacobs maintained that if tuberculous pericarditis were treated by leaving the pericardial incision open but without other drainage, recovery would be rapid and satisfactory. Aspiration of the pericardial sac was, he thought, always dangerous; adhesions might be present, so that no fluid was obtained; further, the heart muscle might be injured and death ensue.

How important a part in public life is played by doctors in South America may be inferred from the fact that in Paris alone the Minister Plenipotentiaries of Mexico, Chile, and of Equador are members of the medical profession. The representative of Mexico is Dr. Diego Suarez, while Chile and Equador are represented by Dr. Puga-Borne and Dr. Rendon respectively. Dr. Manrique was formerly Minister Plenipotentiary of Colombia. Drs. Olano, Santiago, Letond, Hernandez, Gana, Alberto Alvarez Canas, are Consuls-General of Salvador, Chile, Costa Rica, and other states.

Correspondence.

THE REORGANIZATION OF THE ASSOCIATION.

SIR,—It appears to me absolutely necessary that the Annual Representative Meeting in July should recognize that its primary duty and the one essential reform is the reorganization of the Association, beginning with a thorough overhaul and searching inquiry into the present organization from top to bottom. There will be few to deny this need and its vital importance. No time is more opportune than immediately after a severe test, while the details of cause and effect are fresh in mind. That the present organization is cumbersome, costly, dilatory, and withal ineffectual is admitted. As the medico-political machine for the protection of all the interests of the profession, the Association must have a strong, active, alive, and real organization.

There must be more active co-operation between its component parts, closer communication and touch with its extremities. In this way will confidence in the strength and power of the Association be inculcated in the individual members, and that mutual confidence obtained without which there can be no reliance.

I trust the Representative Body will take this matter in hand seriously as one of urgent necessity.—I am, etc.,

Sittingbourne, May 16th. T. BARRETT HEGGS, M.D.

*** A reference to the paragraph headed "Reform of the Present Constitution" in the report of the Proceedings of Council, published on page 421 of the SUPPLEMENT of May 10th, will show that this subject is receiving the earnest attention of the Council, and that the matter is being expedited as much as possible. The Organization Committee has a report in preparation which will be presented to a special meeting of the Council on June 13th.

POST-GRADUATE STUDY IN PARIS.

SIR,—In starting next autumn a special course of post-graduate classes for the benefit of British medical men, Professor Widal's only aim is to offer, in Paris, the same opportunities as your fellow-countrymen are used to find in the German and Austrian schools.

If Sir William Osler's advice about studying in a foreign country is followed by any of your readers, here, then, is an opportunity of availing themselves of the very best resources of the modern Paris school, using school in the broad sense of the word, for this organization has nothing to do with the university: it is worked privately in Widal's private laboratories and wards.

A schedule will be published in due time. Our programme includes:

1. Clinical work and clinical teaching.
2. Practical bacteriology as regards diagnosis.
3. Practical teaching of biological methods applied to clinical researches, more especially the practical demonstration of Professor Widal's original methods.

Every opportunity will be given for those who want to study specialities, and hours will be arranged so that no time will be lost. But as we want more than anything else to be practical and useful, I would be glad to hear from those who may be interested in this new departure. Any advice, hint, or suggestion would be welcome.

For instance, we are not quite sure about the suitable time to start this course (we suggest October 15th); and we wonder if we might run it up to Christmas? It has also been suggested that the teaching should be done in English. Much may be said *pro et contra*. On this very important point I should like to hear from those who may be interested.—I am, etc.,

GUSTAVE MONOD, M.R.C.P.Lond., M.D.Paris.

Vichy, May 17th.

RHEUMATOID ARTHRITIS.

SIR,—Sir James Barr's article on rheumatoid arthritis was not very convincing. After an opening showing how impossible it was that the disease could be caused by any bacillus, he began his directions for treatment by advising that the mouth should be kept free from micro-organisms. This was not a piece of general advice, but part of the treatment of the disease known as rheumatoid arthritis.

As regards his argument as to a bacillary cause, it should seem that the absence of proof that a particular cause produces a particular effect is not a very strong proof that it may not do so. As a general rule a theory must have much added to it before it can become a theorem, but the fact of there being a transition stage cannot be held to be sufficient reason for rejecting the theory.

I have pointed out that there is no such thing as rheumatic fever in the Malay Peninsula, and Major Buchanan agrees with me that there is none in tropical India. I now add that in eighteen years' experience in the tropics I have never seen a case of rheumatoid arthritis, and think that the factor underlying this great difference between England and the Malay Peninsula should supply the knowledge of the cause of these diseases.

It seems to me more than possible that the absence of both these diseases in one place indicates a causal connexion, and that rheumatoid arthritis may be a sequel of the presence of the poison of rheumatic fever without the original disease necessarily ever having manifested itself, just as nephritis may manifest itself as a sequel of scarlet fever or of quartan malarial fever without any history of the occurrence of one of these diseases previously. I do not mean that rheumatic fever is the cause of rheumatoid arthritis, but suggest that the cause of rheumatic fever is a necessary constant in the production of rheumatoid arthritis. The fact that rheumatic fever does not occur in the Malay Peninsula may be due to the organism producing it being unable to exist extra-corporeally at a mean temperature of 80° F.—I am, etc.,

J. Tertius Clarke,
Hinckley, May 14th. Health Officer, Perak, South F.M.S.

Sir,—I have such a high opinion of the excellent work of Dr. Chalmers Watson on dietetics that I am quite prepared to receive any opinion of his with the greatest respect; but on the present occasion I am rather sorry to see him parting with the substance for the shadow. It will be time enough for Dr. Watson to clench his view "that the disease is a toxic arthritis of bacterial origin" when he has discovered either the bacterium or its toxin. I have shown that there are many cases of arthritis of microbic origin, but I think that such cases can be and should be differentiated from what I understand by rheumatoid arthritis. There is, in my opinion, no justification for allowing the numerous joint affections to remain in their present muddle in the medical mind.

The "curious inconsistency" which Dr. Chalmers Watson thinks he has discovered may turn out to be a mare's nest. I have no wish to shut my eyes to any inconsistency, if such can be shown to exist, as I always appreciate the saying of Burns:

> O wad some pow'r the giftie gie us,
> To see oursels as ithers see us!
> It wad frae mony a blunder free us.

In this case, however, the blunder, according to Dr. Chalmers Watson, carries me in the right direction. Perhaps we will all get there in time.

I have always advocated, and I hope I shall always continue to advocate, the treatment of the patient rather than his disease. In any disease every morbific condition present or in any way associated with the disease should receive attention. If there be any interference with the digestion, either by pyorrhoea or anything else, it should be corrected. There are often acid-forming organisms in the mouth. The carbohydrate metabolism set up by acid-forming organisms cannot be cured by a vaccine, and organic acids introduced from without, though not so constant in their action, may prove almost as injurious. It is remarkable how scanty is the evidence of putrefaction in this disease considering the frequent constipation. We do now and again get a trace of indican in the urine, but not such as to justify any one in ascribing any rôle in this disease to putrefactive organisms. There is no vaccine which can harm any organism which has merely established a habitat on any unbroken surface of the body; the bacterium must get beyond the surface before the vaccine comes into play. I saw a lady the other day whom I had previously seen about six years ago, when I found a luxuriant growth of the *Bacillus coli* in her stomach. My treatment with antiseptics and keeping the bacilli moving proved advantageous for a time, but on a relapse she got into the hands of a London physician, who gave her a long course of an autogenous vaccine. The last end of this woman is worse than the first, but I hope she has now had sufficient experience to make her give a rational treatment a fair trial. There has been plenty of evidence of putrefaction in her case but none of rheumatoid arthritis.

I am delighted to find Dr. Pagan Lowe among the converted; yesterday I came across a young woman (Mrs. E.) who about two years ago was a long time under his care with rheumatoid arthritis, and since then has seen many others, but has steadily got worse. She had sour milk, radiant heat, vaccines, and arsenic, all to no purpose so far as she is concerned. She is now on a Salisbury diet, and in a short time will be getting as much milk as would now please Dr. Pagan Lowe.

Dr. Thurstan Holland has pointed out to me that in my last letter I misunderstood Dr. Bailey's remarks about the skiagrams, and that Dr. Bailey did not mean, as I thought, absorption of lime salts at the seat of fracture, but absorption from some of the neighbouring bones—for example, in Colles's fracture of some weeks' standing there may be absorption of the lime salts from the carpal and metacarpal bones. I noticed in the skiagrams which Dr. Holland showed me that the finely stencilled lines of absorption occurred at the edges of the bones where the blood supply comes from the periosteum. So far there is no explanation forthcoming as to how this interesting fact takes place or why it should occur. The solution of this problem, which will repay the considerable amount of trouble necessarily involved, seems to me comparatively simple, or at least one which will offer no insuperable difficulties. It would appear as if the atrophic condition of bones and muscles did not entirely depend on the want of use, but had some underlying common cause. It is here not merely a question of dietetics but also of the oxidation of the sarcolactic acid generated in the muscles. It is well known that in tuberculous disease of the bones and in severe cases of phthisis there is a marked deficiency of lime.

It will take something more than Dr. Craig's recollection to make me believe that Sir Robert Christison ever uttered such a statement as that attributed to him by Dr. Craig. I look upon such a statement as a libel on the memory of a great man. In 1873 rheumatoid arthritis—a name which had been coined by Sir Alfred Garrod some years previously—was merely a generic term for a group of chronic joint affections which had not been differentiated, and the whole series were then as inextricably mixed as they are to-day by Dr. Craig.

Sir Robert Christison never wrote anything about rheumatoid arthritis; the principal physiological effects of calcium were not then known; his lectures on materia medica had no necessary connexion with therapeutics, and in his remarks on the actions and uses of the lime salts there is not one word about rheumatoid arthritis. I can find no reference to the use of the lime salts in this disease in any work which I have come across published about or before that time. The infusion of straw scarcely merits the contempt poured upon it by Dr. Craig, as it contains a large quantity of lime in solution, and might thus be of much more use in this disease than, say, barley-water or a "thermo-penetrating current."

Sir Robert Christison's admirable investigation on poisoning with oxalic acid was carried out in co-operation with Dr. Coindet of Geneva; they recognized that oxalic acid formed soluble salts with calcium and magnesium, and hence the alkaline salts of these metals were recommended as antidotes; after the absorption of the oxalic acid or of any of its soluble salts they ascribed its secondary poisonous effects to a sedative action on the nervous system, and did not recognize that it deprived the blood of its soluble calcium salts which are necessary for the maintenance of the heart's action. Dr. Coindet was the first to introduce iodine in the treatment of bronchocele, which sometimes had a good effect and at other times the result was rather disastrous. This no doubt arose from the fact that the endemic was not then differentiated from the exophthalmic variety.—I am, etc.,

Liverpool, May 17th. James Barr.

SYPHILIS AND CANCER OF THE TONGUE.

SIR,—As a letter by Dr. Renshaw in your issue of May 10th affects Mr. Ryall and myself, I may be allowed a reply for both. In endeavouring to establish the thesis that syphilis is an important factor in the production of cancer of the tongue, the limitations of inductive logic were quite well appreciated, but the argument is none the less cogent. The following facts were put forward by Mr. Ryall: (1) The history of syphilis in 80 per cent. of cases, (2) the accompanying evidences of lingual syphilis in most, (3) the observation of syphilitic tongues in which cancer afterwards supervened, (4) the marked local improvement that frequently results from the administration of antisyphilitic remedies in cases proved to be cancer of the tongue, and (5) the indication of a syphilitic taint given by the Wassermann reaction. There is probably not much weight in the contention that the oral administration of mercurial salts is a factor in the production of cancer of the tongue, nor are there any statistical data available to us which alone would enable it to be said whether the disease is more or less frequent in this country than on the Continent. The statement quoted in this respect is one of those unsupported assertions regarding cancer that are scarcely worth the trouble of refuting.

The main point with regard to the employment of the Wassermann reaction in cases of lingual lesions is that it is quite useless as a means of discriminating between cancer and syphilis. This is just what one would expect. In cases of cancer in other situations a positive Wassermann reaction, provided a reliable method is adopted, is very rare, and when it is found, as it has been by several other workers besides myself, a preceding syphilis is either known or cannot be excluded. Many of the reactions that pass under the name of "Wassermann reactions" are far from being reliable, and Dr. Renshaw was quite entitled to ask what technique was adopted and to reject the conclusions if the method used was, in his opinion, slipshod. A comprehensive reply to the request for precise information regarding percentages and methods could not be given, for the reason that the reports of others were not available for critical examination, but a definite statement could be made in respect of seven cases of lingual cancer investigated, amongst many other things, by a well-known quantitative method. This method and its *rationale* are, perhaps, unknown to Dr. Renshaw, for he would have spared me a little lecture on elementary principles, which I trust are as clearly understood as they were pontifically expressed by him. I would quite appreciate the criticism that my chance sample might be abnormal and capable of correction by more extended experience, but in view of the general strength of the case for syphilis as an etiological factor, in my opinion unassailable, such a research would be comparatively profitless endeavour.

I am sorry I have not the time, much as I have the desire, to be of service to Dr. Renshaw in controlling his results by the Browning-Mackenzie method, and I am regretfully precluded—for the present—from furnishing him with cancerous serum by the fact that my own serum investigations of another nature are only limited by the available supply of material, on which several friends have already a heavy mortgage.—I am, etc.,

Cancer Hospital, S.W., May 16th. ARCHIBALD LEITCH.

WHOLE-MILK DIET FOR INFANTS.

SIR,—Dr. Cameron evidently believes[1] that the vast majority of digestive disturbances are due to excess of either sugar or fat in the diet. An excess of protein he believes will not cause dyspepsia, and in support of his hypothesis he refers to the great success of whole-milk feeding. The good results he attributes to the low percentage of sugar in cow's milk rather than to any means which may be employed to prevent the clotting of casein in the stomach. I have had considerable experience in giving undiluted cow's milk at my infant consultations during the last five years, and I can fully confirm Dr. Cameron's opinion as to the success of this method, but I fail to see why excess of protein should never cause dyspepsia, or that the clot which is formed in the stomach should have no effect on digestion. It is surely reasonable to assume that the gastric and intestinal juices find it harder to battle with a solid substance than if the food is present in a fluid form. I have found the addition of sodium citrate of the greatest value in whole-milk feeding. I use 1 grain to each ounce of milk.

Later on in his article Dr. Cameron draws rather a gloomy picture of the child who is fed entirely on pure cow's milk. He says that "the want of sugar often leads to constipation, to want of growth, and to backward development generally." He writes of the pale, undersized pure-milk infants, and compares this with the larger and fatter infant who has some additional sugar in the diet. Now, I venture to say that this description gives an entirely false view of the pure-milk baby. No doubt at Guy's Hospital the infants are only brought when they are ill, so that Dr. Cameron would come in touch with the failures due to whole-milk feeding. On the other hand, at our infant consultations the object is to prevent illness, and so we are able to exercise some supervision every week with regard to the amount and quality of food. We certainly do not see these small, puny, backward children which we can definitely ascribe to whole-milk feeding and to no other cause. On the contrary, the vast majority are active and have hard muscles, and are better developed than those fed on milk mixtures. The growth of an infant is surely more dependent on the protein constituents of the food than on any other.

Dr. Cameron says, in referring to pure milk feeding, that he "has seen infants who for months showed no gain in weight, although they were daily taking enormous amount of milk of good quality." These cases, I should say, were suffering from dilated stomachs due to overfeeding. It is essential that the child should not be given more milk than it can digest; the small feeds which even breast-fed infants obtain, as shown by the "test feed,"[2] should put us on our guard in ordering cow's milk. I have repeatedly found the child puts on weight if the amount of milk is reduced. I cannot agree with Dr. Cameron that whole-milk feeding causes constipation. I find that the commonest cause of constipation is starvation, and that if the quantity of food is cautiously increased the bowels will act regularly. It stands to reason that if there is not sufficient residue in the bowel there can be no stimulation of the centre in the spinal cord. I have never found it necessary to give drugs or sugar to cure constipation.

I think proprietary foods should be prohibited amongst the poor because of their expense. Carbohydrate can be given in the form of bread jelly to infants of 6 months and over, and amongst the very young ones I order bread soaked in boiling water, and then squeezed through muslin; the portion which passes through the muslin can be added to the milk in the bottle.—I am, etc.,

RONALD CARTER, M.D., M.R.C.S., L.R.C.P.

Kensington, May 14th.

EXISTING UNSATISFACTORY CONDITION OF THE SCHOOL MEDICAL SERVICE.

SIR,—The success of any particular service—that is, its usefulness to the community—will be strictly in proportion to the talent and energy of those engaged in it. There are two ways of securing this talent and energy. You may arrange to have a good sprinkling of big plums in the way of remuneration and a host of comparatively inadequately paid minor positions. This is the traditionary method of the church, the bar, the legal, and the medical professions, and it keeps up a steady stream of the most energetic and ambitious heads. Or you may offer a host of modestly satisfying positions, each sufficient to make a man able to maintain a status that the world will think dignified, with a slow but sure scale of increment. This is the method of the civil services; it is not perhaps so attractive as the other to our most enterprising youth, but it serves.

It must be admitted that the school medical service has neither big plums nor a steady if modest competency to offer. It is, indeed, fed at present by the enthusiasm which a new subject begets, the thrill and pride of pioneering. But this cannot, of course, last; and it is evident that, unless the school service can be put on the same footing of self-sufficiency as the public health and other services, it will be starved of its most energetic men and women.

[1] BRITISH MEDICAL JOURNAL, April 26th, 1913, p. 872.

[2] *Lancet*, September 2nd, 1911.

The general notion of linking up the school service with the public health service in each locality is thoroughly sound. We want for each county a chief medical officer, a great administrator, to co-ordinate all the medical interests—hospitals, asylums, river pollution, school inspection, and what not. But as a corollary each separate medical interest needs a seasoned and experienced chief who can feel that if he gets no further up the ladder, it will at least not mean disaster to his family.

It is evident that there will continue to be unrest in the school medical service until the conditions come more nearly to resemble those of the public health service.—I am, etc.,

Stafford, May 20th. JOHN PRIESTLEY.

EVIDENCE FOR AND AGAINST TUBERCULIN.

SIR,—The question raised by Dr. Batty Shaw (May 3rd, p. 921) is one of primary importance, especially to the general practitioner. And it is time that an attempt were made to give a definite and authoritative answer to the question, Is there clear evidence that pulmonary tuberculosis can be cured by the use of tuberculin? Dr. Batty Shaw is specially qualified to deal with the question from his experience as a physician of the Brompton Hospital and the calm, judicial attitude of his mind.

One of the arguments which he brings forward on the negative side strikes me as having great significance:

"If it were proven," says Dr. Batty Shaw, "that tuberculous cattle could be cured by vaccination by means of tuberculin, we may be quite sure (1) that it would be widespread in veterinary practice; (2) that the whole medical profession would have adopted it with very little hesitation, and they would have been justified. But where are the reports on cattle which should make us at ease on this point? Frankly, they do not exist."

Surely that is a staggering blow to the tuberculin propaganda. If bovine tuberculosis has not been cured by bovine tuberculin, what reason is there to assume that human tuberculosis will be cured by human tuberculin?

In the BRITISH MEDICAL JOURNAL of May 10th I see a letter by Dr. J. Stavely Dick criticizing in a very temperate manner Dr. Shaw's address. But I cannot quite see the force of his remark that "the crucial experiment, however, of leaving Nature alone in one series of cases and introducing this or that factor in another series cannot, for obvious reasons, be made."

What are these obvious reasons, and what other method would Dr. Dick suggest to test the value of a doubtful remedy? Dr. Dick states that he is "convinced clinically (1) that in the doses suggested by Sir Almroth Wright it does no harm in afebrile cases; and (2) that in a very considerable percentage of such cases real good is effected"; but I should like to know whether the "real good" includes a decided and curative effect on the pulmonary lesion as revealed by physical examination of the chest.

My attitude is not one of hostility to tuberculin, but that of one who is desirous to have definite proof of its curative effects.—I am, etc.,

JAMES W. ALLAN,
Resident Physician, Bellefield Sanatorium, Lanark; late Physician, Glasgow Royal Infirmary.
May 12th.

VACCINATION INQUIRY IN THE ISLE OF MAN.

SIR,—Your condensed report of the above inquiry is quite fair, but your editorial remarks are not fair. They are contradictory. The reason of the difference is that the former is based upon the actual evidence supplied by an official verbatim report of the proceedings, whereas the latter consists of deductions drawn from the speeches of members of the Legislative Council, who were anything but correct in their statements and conclusions.

You quote the strong remarks of two members—the Attorney-General and the President (Lord Raglan). The former stating that my evidence "convinced him that there was absolutely nothing in the case against vaccination." But if you will look at his remarks uttered just before, you will see that he says:

I approached the subject strongly prepossessed in favour of the utility of vaccination, and the undesirability of in any way relaxing the law to enforce it.

This considerably discounts his estimate of my evidence. It was clear that every one of the ten members of the Council was in the same frame of mind, and the result, so far as they were concerned, was practically settled before the inquiry commenced.

You proceed to quote what the Attorney-General said of my remarks concerning the relationship between original cow-pox and syphilis. If you will compare his criticism with your own report of my evidence you will see that he never grasped my argument, and, if the full report of the examination and cross-examination is perused, it will be noticed that he quite failed to understand the subject at all.

It is to be regretted that you should quote the remarks made by Lord Raglan, and add that "what actually happened is reflected in the remarks of the Attorney-General and Lord Raglan" without first verifying the truth of the criticism. Both gentlemen have gravely misrepresented me. No such expression and no such "attack" as stated by Lord Raglan fell from my lips, and I indignantly repudiate his statements. Nothing of the kind professedly quoted by him can be found anywhere in my evidence.

I enclose a copy of my reply to Dr. Drury's evidence, together with my answer to the speeches of the members of the Legislative Council.—I am, etc.,

Gloucester, May 19th. WALTER R. HADWEN, M.D., J.P.

Public Health
AND
POOR LAW MEDICAL SERVICES.

SCIENTIFIC RESEARCH FOR THE LOCAL GOVERNMENT BOARD.

THE President of the Local Government Board has authorized the following special researches to be paid for out of the annual grant voted by Parliament in aid of scientific investigations concerning the causes and processes of disease:

Continuation of the Board's inquiries into:

1. The cause of premature arterial degeneration, by Dr. F. W. Andrewes.
2. On insects in relation to disease: Professor Nuttall, F.R.S., on the life-cycle of the body-louse and bug; Dr. Bernstein and Mr. Hesse, on the *Empusa muscae* in flies.
3. As to infantile diarrhœa, by Mr. F. W. Twort and Dr. Edward Mellanby.
4. As to the virus of poliomyelitis, by Drs. Andrewes and M. H. Gordon.

And the following investigations:

5. By Mr. F. W. Twort, into the character and life-history of certain filter-passing micro-organisms.
6. By Professor Leonard Hill, F.R.S., on respiratory exchange in man under varying conditions.
7. By Mr. J. E. R. McDonagh, on the biochemistry of syphilis.
8. By Dr. L. Rajchman, into the possibilities of serological diagnosis of scarlet fever.
9. By Dr. D. M. Alexander, on the relation between the clinical symptoms and the bacteriology of the acute respiratory affections.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A COUNCIL meeting was held at 24, Copthall Avenue, London, E.C., on May 15th, Dr. Balding, J.P., being in the chair.

The Honorary Secretary reported the death of one of the members of the council (Dr. T. Carey Barlow); on the previous Friday he had gone to bed after his usual day's work, and passed away during the night. Much regret was expressed by the members present, and the Honorary Secretary was instructed to write to Mrs. Carey Barlow, conveying the sympathy of the council with her in her sad bereavement.

Dispute at Burnley.

The Honorary Secretary reported that there had been little change with regard to the Burnley dispute since the last council meeting. A copy of the last letter of the association dealing with the matter had been sent by the Local Government Board to the Burnley guardians, who had replied they had nothing further to add. The new board of guardians had endorsed the recommendations of the late board; but up to the present no further answer had come from the Local Government Board, but it was hoped that before coming to a decision it would hold a local inquiry.

Cost of Drugs.

A letter was read from one of the district medical officers of the East Ham Union, stating that the guardians were proposing

to supply at their own cost the medicines, etc., hitherto found by the medical officers, and that the clerk to the guardians had inquired what deduction from their salaries they were prepared to allow in consequence. The district medical officers strongly objected to any deduction. In addition to the pecuniary loss, it would further diminish the value of their superannuations in the future. The council was strongly of opinion that no deduction should be permitted. Drugs ought in all cases to be supplied at the expense of the guardians, and the present salaries of Poor Law medical officers were by no means exorbitant for the medical work alone. Dr. Holder (Hull) said that the Sculcoates Guardians not long ago decided to supply the drugs, and took that duty off the medical officers without diminishing their salaries. He believed the same had been done by other boards of guardians.

Emergency Attendances.

The responsibility of guardians to pay for services rendered to inmates of their workhouse by practitioners called in the absence of the workhouse medical officer was raised by a recent occurrence in a northern town. The council was of opinion that if outside medical assistance were called for on behalf of the guardians by an officer entitled to pledge the credit of the same a fee could be recovered. It was not clear why in this instance the deputy had not been sent for. It was decided that the annual meeting should take place in London on Thursday, July 3rd, at 3 p.m.

Insurance Act.

It was pointed out that complaints were arising in many places that the maternity benefit seriously interfered with the emoluments derived from the extra fees granted for attendance on midwifery cases. In one union a medical officer was petitioning his board for compensation on the ground that his quarterly account for extra fees, which had never been below £20 for many years, had dwindled down in the last quarter to £7. When the serious effect of such a reduction, if permanent, on the superannuation of the medical officer is considered, the reality of the grievance becomes obvious. It was thought by the council that Poor Law medical officers were quite as much entitled to compensation for losses of this nature as were vaccination officers for their loss of income through the "conscience clause" in the last Vaccination Act, and with regard to the latter compensation had been given in some instances.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following gentlemen have been appointed by the General Medical Electorate as members of the new Board of Faculty of Medicine:

Dr. A. E. Garrod, F.R.S., Dr. Cecil Wall, Mr. A. P. Dodds-Parker.

New regulations have been approved by the Board of Faculty of Medicine for the First B.M. Examination in Organic Chemistry, and will be published in the forthcoming issue of the *Examination Statutes*.

UNIVERSITY OF CAMBRIDGE.

New Psychological Laboratory.

THE buildings of the new psychological laboratory at Cambridge, erected from the designs of Sir T. G. Jackson, R.A., in the English Renaissance style, were formally opened by the Vice-Chancellor on May 15th. The new laboratory is approached by the same entrance and staircase as the physiological laboratory now in course of construction. The psychological laboratory consists of three floors. On the ground floor are a lecture-room, a mechanic's workshop with a small organ bellows for blowing wind instruments needed for acoustic experiments, and a research room. On the first floor is a library, dark room, and two practical class-rooms. On the top floor are six research rooms, including a sound-proof room for auditory experiments and another which can be completely darkened. When the organization of a department of experimental psychology was begun by the appointment of Dr. Rivers, room was found for it in the physiological laboratory, but its growth compelled it to move in 1901 and again in 1903. In 1907 Dr. Rivers became lecturer in the physiology of the senses and Dr. Myers in experimental psychology, and the university thereafter offered a space on the Downing site for the construction of the new laboratory. Dr. Myers succeeded in collecting £4,000 for the building now completed, and grants have been made for its equipment and endowment from the Museum Fund and by the Cambridge University Association.

UNIVERSITY OF EDINBURGH.

UNIVERSITY COURT.

AT the meeting of the University Court on May 13th, sympathetic reference was made to the death of the Right Hon. William M'Ewan, P.C., LL.D., which became known during the course of the sitting, and it was arranged that the chairman (Principal Sir William Turner) should represent the university at the funeral on May 15th at Bookham, in Surrey.

The Court had before it an Order of His Majesty in Council approving of the Court's Ordinance No. 14, which has to do with the foundation of a Chair of Bacteriology (to which reference was made in this JOURNAL, vide p. 1076). Grants from the Earl of Moray Endowment for the promotion of original research, recommended by the Senatus, were approved.

Recognition, for a term of three years, was granted to Dr. John Orr, Edinburgh, as an extra-academical teacher, whose course of instruction in practical materia medica shall qualify for graduation in medicine.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE COUNCIL.

THE constitution of the Council of the College is as follows:

President.

Sir Rickman J. Godlee, Bart.; C, (1) 1897, (2) 1905.

Vice-Presidents.

Mr. Clinton T. Dent (deceased); C, (1) 1903, (2) 1911.
Mr. G. H. Makins, C.B.; C, (1) 1905, (2) 1911.

Other Members of Council.

Sir Henry Morris, Bart.; C, (1) 1893 (substitute), (2) 1898, (3) 1906.
Mr. Edmund Owen; C, (1) 1897, (2) 1905.
Sir W. Watson Cheyne, Bart., C.B.; C, (1) 1897 (substitute), (2) 1901, (3) 1909.
Mr. F. Richardson Cross; C, (1) 1898, (2) 1906.
Sir A. Pearce Gould, K.C.V.O.; C, (1) 1900, (2) 1908.
Mr. R. Clement Lucas; C, (1) 1901, (2) 1909.
Mr. C. W. Mansell Moullin; C, (1) 1902 (substitute), (2) 1907.
Sir Frederic Eve; C, (1) 1904 (substitute), (2) 1907 (substitute), (3) 1912.
Sir Anthony A. Bowlby, C.M.G.; C, (1) 1904, (2) 1912.
Mr. C. H. Golding-Bird; C, 1905.
Mr. W. Harrison Cripps; C, (1) 1905 (substitute till 1908), (2) 1909.
Mr. W. Bruce Clarke (resigned); C, 1907.
Mr. Charters J. Symonds; C, 1907.
Mr. W. F. Haslam; C, 1908.
Mr. C. Barrett Lockwood; C, (1) 1908 (substitute), (2) 1910.
Mr. W. Arbuthnot Lane; C, 1908.
Mr. Bilton Pollard; C, 1910.
Mr. C. A. Ballance, M.V.O.; C, 1910 (substitute for Mr. G. A. Wright till 1914).
Sir J. Bland-Sutton; C, 1910.
Mr. D'Arcy Power; C, 1912.
Sir Berkeley G. A. Moynihan; C, 1912 (substitute for Sir H. T. Butlin, 1919).

The medical schools are represented as follows:

London:		
St. Bartholomew's		5*
Guy's		4
King's College... ...		1
London		2
Middlesex		3
St. George's		1†
St. Mary's		1
St. Thomas's		2
University College ...		2
Total, London Schools ...		21
Provincial:		
Birmingham		1
Bristol		1
Leeds		1
Making total of Council ...		24

* Including Mr. Bruce Clarke, resigned.
† Mr. Clinton Dent, deceased.

On this occasion there will be four vacancies. Mr. Edmund Owen and Mr. C. H. Golding-Bird, who were elected in 1905, retire in rotation, having served the term of eight years. Sir Rickman Godlee, re-elected in the same year, does not retire, as he holds the office of President. The third vacancy is due to the death of Mr. Clinton Dent, re-elected in 1911, and the fourth to the resignation of Mr. W. Bruce Clarke, elected in 1907.

Owing to a misunderstanding it was stated last week that Surgeon-Major H. B. Hinton had been elected an Honorary Fellow. It should have been said that the Council had adopted a resolution congratulating him on attaining the hundredth anniversary of his birth.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

The Fellowship.

THE following candidates have been admitted to the Fellowship:

F. Armstrong, C. B. Baxter, G. N. Braham, R. C. Brewster, H. A. Cookson, F. H. Diggle, K. B. MacGlashan, F. G. Ralphs, F. A. Scannell, R. L. Scott, A. D. Stewart, A. C. Thomson.

The Bathgate Prize in Materia Medica has been awarded to Mr. G. T. Mowat.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Appointments.

THE following have been appointed to act on behalf of the College at examinations for the Conjoint Licence and the Diploma in Public Health: In *Anatomy*, A. C. Geddes and A. A. McConnell; in *Surgery*, C. A. Ball, G. J. Johnston, Seton Pringle, R. A. Atkinson; in *Physiology and Histology*, J. A. Scott; in *Pathology and Bacteriology*, A. H. White; in *Midwifery and Gynaecology*, F. W. Kidd; in *Biology*, J. Burgess; in *Ophthalmology*, H. Cunningham and R. D. Joyce; in *Chemistry*, S. Young; in *Sanitary Law and Vital Statistics*, M. Russell; in *Engineering and Architecture*, C. J. Powell.

The following have been appointed examiners for the Fellowship of the College and for its Licences in Surgery and Midwifery: In *Anatomy*, A. C. Geddes and J. Keegan; in *Surgery* C. A. Ball, L. G. Gunn, G. J. Johnston, and Seton Pringle; in *Physiology and Histology*, F. Purser and J. A. Scott; in *Pathology and Bacteriology*, R. J. Rowlette, A. H. White; in *Midwifery and Gynaecology*, F. W. Kidd; in *Chemistry and Physics*, E. Lapper and S. Young.

Mr. J. B. Story has been elected a member of the Council of the College.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—R. J. Bassett, E. J. Benson, T. F. Broderick, T. F. Corbett, E. M. T. Crymble, I. B. Culhane, H. W. Hackett, H. I. Hawkes, D. Kelly, J. E. Lucas, J. A. McKinnon, *D. J. Steele.

SECOND COLLEGE.—*H. M. Alexander, C. H. Brennan, M. Burke, W. R. Dimond, K. Elmes, B. Glasson, *H. Graham, F. Greene Kelly, M. J. Loftus, C. A. R. McCay, C. W. Robinson, J. Ryan, A. R. Soady, N. E. Stephens, P. J. Walshe.

THIRD COLLEGE.—T. M. Cronin, W. A. N. Fox, T. L. Enright, T. F. Higgins, J. D. Hamilton, W. J. A. Laird, J. S. McHugh, C. J. O'Carroll, D. V. O'Connor.

FINAL.—Miss M. J. Ahern, B. N. Blood, J. Barrett, D. W. Beamish, H. J. Burke, P. D. Daly, A. J. Faulkner, F. E. Fitzmaurice, J. J. Glynn, T. J. Kelly, A. P. Kennedy, J. Kirker, V. J. Lawless, F. J. McCarthy, T. Mulcahy, C. Petit, C. L. Sproule, T. J. Sinnott, G. Wilson, W. Waugh.

D.P.H.—J. Hormasji Contractor, J. Daniel, *C. A. Farrell, M. Halpenny, Sheik G. Rasul, W. G. Ridgway, H. Roberts, *L. Robinson, *N. J. C. Rutherford, Major R.A.M.C., *P. Sampson, Captain R.A.M.C., *J. L. Thomas.

* Passed with honours.

Obituary.

COUNT RINALDO TAVERNA, Senator of the Kingdom of Italy, and President of the Italian Red Cross, who recently died, displayed great energy in organizing help for the sufferers from the earthquakes of Messina and Calabria, in the cholera epidemics of 1910, 1911, and for the wounded in the Tripoli campaign and in the war in the Balkans. His loss is greatly regretted by the medical profession.

MISS ARA GRAY MURCHISON, whose early death took place on May 10th, was a student of the Medical College for Women, Minto House, Edinburgh, during the years 1902–7; she graduated M.B., Ch.B. in Edinburgh University in 1907, and afterwards did work as an assistant in Lanarkshire; then for a time she was resident medical officer of Egilshay, Roushay, and Weir (or Viera), in the Orkney Islands; next she was assistant medical officer of health in Huddersfield and then resident medical officer to St. Luke's Hospital, Halifax. At this time, however, her health broke down and she underwent a serious operation. It was hoped that her health was restored and she returned to Edinburgh, where she was appointed clinical assistant in the Electrical Department of the Royal Infirmary, and busied herself also with research work; but her former trouble returned and after an illness of two months she passed away. She was buried in Rosebank Cemetery on May 13th.

In its May number our contemporary *Garden Cities and Town Planning* states that an International Garden Cities and Town Planning Association has been formed. For the present the offices will be at 3, Gray's Inn Place, London, W.C., and Mr. Ewart G. Culpin will act as honorary secretary. Already a number of organizations dealing with these matters have intimated their willingness to join such an international movement, and it is proposed to hold periodical conferences in the various countries represented. During the past two months over two hundred requests have been received from different parts of Europe, Asia, Africa, America, and Australasia for information on civic matters. These have in the past been dealt with by the Garden Cities and Town Planning Association, but the growth of the work both in Great Britain and abroad necessitates the promotion of the new association in order to link together the various bodies that are being formed in different parts of the world. Among the countries represented by these inquiries are the United States, France, Germany, Russia, Poland, Hungary, Austria, Roumania, Sweden, Belgium, Holland, and Spain, each of the States of Australasia and South Africa and the Canadian Provinces, India and Burma, and Trinidad.

Medical News.

THE late Mr. Jordan Lloyd, of Birmingham, left estate valued at £60,213 gross, with net personalty £58,587.

PROFESSOR VON ROENTGEN, of Munich, has been elected an honorary member of the German Surgical Society.

SIR WILLIAM OSLER delivered the Silliman Lectures at Yale University recently, his subject being the Evolution of Modern Medicine.

THE Canadian Medical Association will hold its forty-sixth annual meeting in London, Ontario, on June 24th and 27th, under the presidency of Dr. H. A. McCallum.

THE sixth medical congrèss de la Langue Française de l'Amérique du Nord will be held at Quebec in 1914, not at Montreal this year as previously stated.

PROFESSOR BATESON'S postponed lectures on the heredity of sex and some cognate problems will be delivered at the Royal Institution on Monday, June 2nd, and Wednesday, June 4th, at 3 o'clock.

AT the meeting of the Royal Society on Thursday next a paper on the action of radium rays upon the cells of Jensen's rat sarcoma by Drs. S. Russ and Helen Chambers will be read, and also a report from the Sleeping Sickness Commission on the morphology of the Mzimba strain of trypanosome.

MR. HENRY RUTHERFORD, of New York, who died in February, has bequeathed the sum of £40,000 to the Rockefeller Institute of Medical Research, the "income to be applied to investigations into the causes and nature of the disease known as cancer and the methods of its prevention and treatment."

THE seventh annual meeting of the Women's Medical Society of New York State was held at Rochester on April 28th under the presidency of Dr. Helen J. C. Kuhlmann of Buffalo. About one hundred women physicians from various parts of the State attended the meeting. Dr. Marion Craig Potter of Rochester was elected president for the ensuing year.

THE Continental manager of the Great Eastern Railway will send to any one interested a copy of a little book well illustrated in colours and black and white describing the company's routes to Harwich and from it to the Hook of Holland, Antwerp, Hamburg, Esbjerg (Denmark), and Gothenburg. The route by the Hook of Holland is one of the best appointed to the Continent, and the traveller's only regret, on a fine night, must be that there is so little time to enjoy the comforts and convenience provided.

THE American Medical Association will hold its sixty-fourth annual session at Minneapolis from June 17th to 20th, under the presidency of Dr. John A. Witherspoon. The work of the meeting will be distributed among the following sections: The practice of medicine, surgery, obstetrics, gynaecology and abdominal surgery, ophthalmology, laryngology, otology and rhinology, diseases of children, pharmacology and therapeutics, pathology and physiology, stomatology, nervous and mental diseases, dermatology, preventive medicine and public health, genito-urinary diseases, hospitals and orthopaedic surgery.

AT a dinner attended by some fifty medical men of Burnley and the neighbourhood on May 10th, Dr. A. E. Bird, Honorary Secretary of the Burnley Division of the British Medical Association, was presented with a massive solid silver tea and coffee service and waiter. All the members of the Division had subscribed to the testimonial, which was presented in recognition of the arduous work of the honorary secretary during the past two years. The presentation was made by Dr. Crump, chairman of the Division, and the service bore the following inscription:—"Presented to Dr. A. E. Bird by the members of the medical profession in the area of the Burnley Division of the British Medical Association as a mark of appreciation of his services as honorary secretary, May, 1913."

WE are asked to state that the National Medical Guild is a trade union for medical practitioners conducted on trade union lines—that is to say, its main policy is the defence of its members by all legal means. It has, as a trade union, immunity for many actions under the laws as to conspiracy and libel, and this is regarded as essential for the protection of its funds and for the success of any combined action on the part of the medical profession. The case Heard *v.* Pickthorne, which it successfully contested, has, it is held, established that it is not competent for an approved society to refuse non-panel doctors' certificates for the purpose of sickness benefit. This case was reported and commented on in the BRITISH MEDICAL

JOURNAL of May 10th, p. 1014 and p. 1033. Medical practitioners, whether on the panel or not, are eligible for election, and the subscription is one guinea per annum. Further particulars can be obtained from the Organizing Secretary, Dr. Gordon R. Ward, 34, Villiers Street, Strand, London, W.C.

IN connexion with the article on the carotid body published in the JOURNAL of May 17th, p. 1074, the following additional particulars will be of interest. In 1900 von Heinleth described the human carotid body as developing until puberty, and stated that it then either underwent atrophy or arrest of development. If it continued to grow after puberty it underwent tumour formation. In 1908 Gomez stated that it increased in size as the individual grew by increase of connective tissue, blood vessels, and parenchyma. Reaching a certain stage, between the age of 20 and 30 years, it remained stationary for a time, and then only the connective tissue increased, the interlobular blood vessels thickened, and sclerosis and atrophy of the gland resulted. Finally, in 1904 Mulon found that aqueous extracts of the carotid bodies of old horses, when injected intravenously into rabbits, gave invariably a rise of arterial pressure, and sometimes an acceleration of the heart and increased force of its beats.

IT seems that the day of oblivion for the sundial is not yet. Under its modern name of "sol horometer"—a name chosen, we imagine, to confound the poets—it is still counting the sunny hours. But as a concession to a world which is less inclined to take trouble than formerly, its mechanism has been adjusted to show the standard time to within the fraction of a minute without any mental deductions and allowances for position. A sector under the bowl of the instrument indicates the correct angle for any latitude, and the instrument is tilted accordingly. To enable the time to be read with precision, a box-shaped screen, somewhat resembling the eye-piece of the radiologist's fluoroscope, extends pivoted across the engraved surface. The purpose of this screen is to reduce the radiation of the light to a minimum, and thus secure a sharp image, which, after the slight adjustment of the dial for the date, duly passes the time of day. The instrument, which is described and illustrated in a pamphlet by Messrs. Pilkington and Gibbs, Limited, of Preston, is clock, calendar, and compass in one, and its appearance on an appropriate pedestal and with the inevitable motto around it, combines old-word dignity with chronological exactitude. The only disturbing element in this method of time-keeping is due to the erratic absences of the sun itself.

THE foundation stone of the new Helena Building at the Royal Free Hospital, Gray's Inn Road, was laid on May 19th by Princess Christian of Schleswig-Holstein, who was received on her arrival by the Earl of Sandwich (Chairman of the Hospital Committee), the Archdeacon of London, Dr. Harrington Sainsbury, Mr. James Berry, Miss R. Cox-Davies, matron of the hospital, and several members of the Board of Management. The Earl of Sandwich, who welcomed the Princess on behalf of all associated with the work of the hospital, said that it had long been the desire of the Committee of Management to provide improved accommodation for out-patients attending the hospital in a building that would meet all modern requirements for their efficient treatment. In this new building provision was being arranged for the reception of accidents and urgent cases, for the medical staff, throat and eye specialists, massage, and dental and electrical departments. A complete maternity department would be provided on the second floor, whilst accommodation was also being set apart for the medical students, in place of their present quarters in the old building. The Royal Free Hospital, continued the speaker, was the only one in London through which women could enter the medical profession. An ever-widening sphere of usefulness was opening out for medical women at home and abroad, particularly in India and the Eastern dominions, and therefore an increasing importance was attached to the work of the hospital and the need for extension was now more urgent than at any other previous time. The Earl of Sandwich then presented the architect (Mr. Ashley) and the contractor (Mr. Downs) to the Princess Christian; and the hymn "Thou to whom the sick and dying" having been sung, the foundation stone was laid, and the benediction given by the Archdeacon of London. The ceremony concluded with the presentation of a number of purses containing subscriptions towards the expenses of the new building. The total collection amounted to £1,632, the cost of the building having been estimated at between £40,000 and £50,000, of which over £11,000 has already been subscribed.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SOFT WATER AND IRON PIPES.

DR. E. H. O. SANKEY (Baschurch, Salop), who has a supply of very pure soft water, finds that it cuts away iron hot water pipes very fast and is always red and rusty. He asks what can be used to line pipes and boiler and so protect them.

INCOME TAX.

G. A. W. asks on what basis the income tax return for the present year should be made in a case in which the effect of the Insurance Act has been to increase income.

*** The profits of the practice should be returned on the average of the past three years notwithstanding the increase. Neither an increase nor a falling off of the profits in a particular year is taken into consideration in arriving at the income-tax liability, except in so far as it affects the average profits.

F. J. W. inquires under what schedule of the income tax he should return his grant for vaccination.

*** As the grant does not arise in connexion with an appointment for which "F. J. W." is assessed to income-tax under Schedule E. the grant should be regarded as part of the receipts of the general practice and included in the profits to be returned for assessment in following years on the average of three years.

DOUBLE TAX.—The Board of Inland Revenue offers no objection to the inclusion in a general practitioner's return (Schedule D) of fees received in respect of public appointments, and, in view of the indubitable injustice that would otherwise arise, we apprehend that the Commissioners will acquiesce in the assessment of insurance fees under Schedule D as profits of the general practice. We advise our correspondent to prepare his return on this basis, and if necessary urge his views on the surveyor of taxes.

ANSWERS.

T. H. M.—Carwardine's saccharometer does not differ in principle from a burette and porcelain capsule, and it is not clear why our correspondent should fail to get a complete reduction of the cupric oxide; after the test tube has stood for a while the bluish tinge, however complete the reduction, will return, as the cuprous oxide takes up oxygen from the air. This may be the source of the difficulty.

PARALYSIS AGITANS.

T. writes, in reply to "G. F. P." (May 10th, p. 1036), as to the treatment of ptyalism in a patient afflicted with paralysis agitans, to recommend ten-drop doses of tinct. belladonnae three times a day or pilocarpine nitrate gr. ⅓.

PAIN IN THE BACK.

IN reply to "Omega," Mr. Paul B. Roth, F.R.C.S., writes: Provided the abdominal and pelvic organs are healthy, and can be excluded, "pain in the back on rising and throughout the day," may be the only subjective symptom of (1) "weak relaxed back," (2) scoliosis, (3) subluxation of the sacro-iliac joint, (4) Pott's disease.

1. In this condition the natural antero-posterior curves of the spine are either exaggerated or diminished, and the patient may be unable to maintain the erect position for more than a few seconds without pain.

2. In scoliosis a hip or shoulder-blade may be prominent, and on flexion of the patient's trunk there may be seen a projection posteriorly on one side more than the other of the ribs, or of the erector spinae in the lumbar region.

The treatment of both these is by "posture and exercise."

3. This condition occasionally occurs: In addition to the pain in the back, a tender spot is found over one or other sacro-iliac joint when palpated behind. It is entirely relieved by encircling the pelvis firmly for some weeks with a strip of broad strapping.

4. Radiograms may be of use here, and an important sign is muscular rigidity; the treatment is, of course, immobilization.

LETTERS, NOTES, ETC.

Confectioner's Paronychia.

A member of the British Medical Association resident in Australia informs us that on the same day that there reached him a copy of the Journal for March 15th, containing an account of that comparatively little recognized disorder, confectioner's paronychia, there reached him also a copy of the *Sydney Daily Telegraph*, which contained an unintentional comment thereon. This was in the shape of an account of an action for damages in respect of an illness brought about, it was alleged, by the plaintiff finding in her mouth a human nail which had been embedded in a chocolate drop just eaten by her.

Countercheck for a Pushful Tradesman.

We are all considered fair game for touts of all kinds. Most of us are content to bear the nuisance with what philosophy we can muster, as we seldom have the chance of appropriately punishing the importunity. It is pleasing, therefore, to read of the countercheck administered by a Strassburg doctor to an enterprising tradesman who sent him a box of cigars which had not been ordered, together with a bill for 15 marks. The accompanying letter stated: "I have ventured to send these on my own initiative, being convinced that you will appreciate their exquisite flavour." To this the doctor replied: "You have not asked me for a consultation, but I venture to send you three prescriptions, being convinced that you will be quite as satisfied with them as I am with your cigars. As my charge for a prescription is 5 marks, this makes us quits."

Rheumatoid Arthritis.

Dr. Wm. Hardman (Bispham, near Blackpool) writes: As I entered the medical profession in 1864 and have been more or less actively engaged in practice until a year ago, you will believe me when I say that I have seen several cases of rheumatoid arthritis. That any single person has seen "thousands" of cases I have difficulty in crediting, as the disease is not common, though it seems commoner than it is, as each case usually lasts many years and passes under the care of several medical men. I have also seen several cases of chronic arthritis which I did not doubt were caused by micro-organisms such as the gonococcus, streptococcus, or pneumococcus. I have thought the rheumatic affections of this latter class usually easily distinguishable from rheumatoid arthritis, and in the arthritis of this kind the most valuable drug I have discovered is creasotal (creasote carbonate), the effects of which are very similar to those of guaiacol carbonate. From potassium iodide alone I have never seen any benefit. I do not believe in the least that exposure to cold and wet are ever essential factors in the causation, for the disease ought to be enormously more common if it were capable of being brought into existence by this, and should be particularly frequently met with in sailors, which, in my experience, it is not. I have noticed no especial connexion between rheumatoid arthritis and poverty; on the contrary, almost all the cases I have seen have been in people well-to-do or comfortably off. The only treatment I have found really effective in true rheumatoid arthritis is antistreptococcus vaccine, the killed cocci hypodermically injected weekly in increasing doses for long periods.

Shall We Drink?

Dr. Wm. Bramwell (Liverpool) writes: Dr. Haddon's reiterations about the elimination of fluid from dietary are interesting in the extreme, but I would like to remind him that it is more than just possible that such advice, acted upon for any great length of time, might lead to disaster. I have had under my own observation more than one case in which I have reason to believe that the patient's continued dislike to fluid has resulted in operation for stone in the kidney. One patient that I have particularly in mind would rarely drink more than half a cup of tea at breakfast, and would frequently go the whole day without taking anything else to drink. His life became a perfect misery to him, even after he had undergone an operation for stone in the kidney; nor was health finally attained until he was advised as to his diet in which a normal amount of fluids was insisted on. And this, it seems superfluous to say, is necessary for the continuous flushing-out of the kidneys.

Since Dr. Haddon has quoted the habits of animals to illustrate his point, I would like also to remind him that farmers seem to think an abundance of water essential for their cattle, or they would not go to the expense and trouble of supplying tubs of water in fields which do not contain a pool or border upon a stream; and judging by the number of times animals are seen to drink at these, one would be led to believe that the elimination of fluids from dietary is against Nature, and particularly so since we know that so large a percentage of the animal body consists of water, a percentage which cannot possibly be kept up by no more than that amount of water which goes to make up the constituents of solid food. How often has a canary been found dead in its cage with an abundance of seed but no water! It is true that there is water in the seed, but yet far from enough to support life. The fact that horses do not drink when at grass seems to me sufficiently explained by their taking in sufficient water when the grass is saturated with morning dew or the rain, but I cannot see any physiological reason for doubting that they get—must get in fact—considerably more water than is actually present in the grass itself.

In advising patients to limit the amount of fluid they drink where a continued low blood pressure has been essential, I have always felt some trepidation lest I should do some harm to the kidneys by favouring the development of stone, and it is this danger particularly that I wish to point out to Dr. Haddon, to say nothing of the possibilities of producing chronic constipation, extreme nervous depression, and all the miseries, nervous and otherwise, consequent upon an inspissated blood, which must of necessity lead to a uric acid diathesis with its thousand and one symptoms.

Herpes and Varicella.

Dr. George Bruce (Melbourne, near Derby) writes: *Apropos* the note of Dr. B. Jones and his reference to the annotation in the Epitome of January 11th regarding chicken-pox following shingles in different members of the same family, I write to say that on April 18th I was called to see a lady over whose right temple and eye a profuse crop of shingles was developing. She was nursed by her sister, who was with her almost without intermission. This sister complained on May 4th of feeling poorly, and during the next day or two numerous spots, which were without doubt those of varicella, began to appear over her face and body. These spots have been going through all the phases characteristic of that complaint.

An Improved Neville's Axis Traction Forceps.

Dr. F. Wm. Inman (Wallasey) writes: In your issue of January 11th, p. 79, Dr. Stack describes an improved Neville's axis traction forceps, the principal feature being an enlargement of the axis traction rod, so that the traction is in the line of a tangent to a semicircle in the axis of the pelvis. So far back as 1900, whilst obstetrical assistant to the Liverpool Lying-in Hospital, I had a pair of forceps made of similar design, and have used them since, finding them of great advantage, and certainly an improvement on the ordinary Neville's. The idea that these forceps might be improved occurred to me whilst a student at the Coombe, Dublin, in 1898, where I saw an unfortunate woman rather badly torn owing, in my opinion, to the insufficient amount of bend in the traction rod; in the efforts to pull in the axis of the pelvis the handles were dragged against the perineum, causing a laceration before the head reached the pelvic floor. Many will say, "Why not use Milne Murray's?" If you are content to apply the forceps, and to then pull until the head is torn, there does not appear to be much advantage; but if you are in the habit of frequently pulling with the left hand, and examining the advance of the head meanwhile, with the right in the vagina, then there is an advantage in not having so much metal in the passage. The great benefit of the simpler instrument lies in the greater ease of application and removal. To take an instance—suppose that you are called to a patientt worn out by a long first stage, the waters having ruptured early on, leaving the cervix almost fully dilated, but owing to the failure of the head to descend, hanging loose in the vagina; having waited as long as possible, you apply forceps, and by gentle traction draw the head through the brim, you now find the cervix caught up and dangerously stretched. After gently pulling with the left hand, feeling the cervix meanwhile with the right, you remove the forceps, and either let the patient come out of the anaesthetic, or at any rate wait a short time, and then reapply. If the cervix still appears to threaten to tear you again remove, and wait for more pains. Having thus safely passed the cervix you bring the head down on the perineum; supposing the patient to be a primipara, you find this to be dangerously stretched, and you remove the forceps and wait for a few pains; progress being slow, you again apply, and gently cause the head to dilate the perineum; having got it well down, you again remove the instrument, and by traction on the back of the occiput, with the fingers of the right hand to draw the occiput down and to prevent early extension, combined with pressure on the chin behind the anus, you cause the head to pass the perineum with the smallest possible sub-occipito-bregmatic diameter distending it. In occipito-posterior cases it is very important to be able to remove the forceps easily, and to reapply after manual rectification.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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An average line contains six words.

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